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An Address.¹

REFLECTIONS ON FREEDOM.

By H. R. R. GRIEVE,

President of the New South Wales Branch of the British Medical Association.

THIS address will be of freedom: less of physical, more of philosophical and mostly of spiritual freedom. There have ever been action and reaction in respect of freedom. There has ever been assertion of the human mind to the right to the freedom vital to it and there has ever been its tireless, seemingly paradoxical and often devilish ingenuity in creating shackles for its own freedom. I came to choose this subject on which to address you because we live at this moment in the shadow of a recurrence of this eternal contest, the free mind *versus* the free mind, action *versus* reaction. Indeed the forces are now actually engaged and the result will depend, as ever, on the moral strength with which the lovers of freedom hold to their task.

This struggle of the free with the free is, as I have said, a paradox, and indeed a most notable one. It has occurred in all ages and is apparently never concluded. No sooner is one phase ended than the resurgence begins. This is substantially what Hegel saw to be the truth when he stated his doctrine of the antagonism of opposing forces. Why the contest never does cease is that the totality of human minds is divisible broadly into two classes, the one directed predominantly by spiritual motives and the other absorbed in materialism. The latter class, whose habitat is coterminous with the world itself, and whose importance has been enhanced in modern days by the propagation of Marxian theory, is, from one direction

or another, the instigator of the conflict. Evidences of this truth are available in most ages, though it has not always been, as Marx prescribed, the materialism of the proletariat which provided the initiative.

The Greek civilization developed its fullest efflorescence, so as to become the admiration of subsequent ages, in the flush of freedom to pursue the highest philosophical and spiritual aims. How majestically Wordsworth immortalized it!

Two Voices are there; one is of the sea,
One of the Mountains; each a mighty Voice:
In both from age to age thou didst rejoice,
They were thy chosen music, Liberty!

Then when the tyrants destroyed liberty, Greece's spirit being no longer conjoined with her strength, her glory gradually diminished in a continually impoverished soil. Nor was there in Greece such a blossoming again. In another age, to be true, in Rome, when the thinkers reconstituted the soil of freedom, the great aspirations of the mind and the spirit grew out and upwards again. The writer and the citizen stood out in a golden age which, like that of Greece, still remains golden after 2,000 years, even though it ended when freedom for the sake of freedom and the spiritual for the sake of its beauty became ends subservient to the mundane, sensuous purposes of kings and people. The blight lay heavy again for long centuries until man's mind, never indefinitely acquiescent, produced Magna Charta and the Renaissance and the Reformation and freedom flowered again. What a harvest! Yet just so certainly followed by the drought. The golden age of Elizabethan literature with its resplendent universality of the human mind and spirit gives place to the formal exactions of the Restoration period, natural beauty, intellectual and scientific enterprise to spacings, crampings, formalities, sanctions and mediocrity. The spirit then sinks again within the limits and restrictions of mind-made codes and dogmas, all foreign to the sublime conception that the true beauty of the spirit of the great Lord Himself was and ever is something for

¹ Read at the annual meeting of the New South Wales Branch of the British Medical Association on March 27, 1947.

the free mind to aspire to perceive. Yet once again with the impetus from France freedom brought her nutriment and a new world was reared in Europe and the West. However, almost before the vintage could be gathered and stored for the uplift of the aftercoming generations, the industrialism of Europe and the materialism of the Americas, both growing out of freedom no less, had reintroduced the blight. It became feasible then to contend as one writer did, that Britain, the body of freedom, had lost her soul, and as another writer did, that with the birth of the United States we saw the beginning of the death of Art—both overstatements these, yet containing some germ of truth. In this present day, after two conflicts, involving almost the whole of humanity, to decide the survival of freedom, the day is no sooner won than a half of the living world busies itself with procuring the death of freedom, constructing the while a vast, cold, complex machinery for the purpose. The mind, freed by dint of the unquenchable spirit of freedom moving the free peoples of the earth, commences on the instant, with a sort of perverted willingness, the deliberate construction of an edifice, the State, within rigid walls, from which the mind, still ironically free, may not adventure lest some fantastic harm may befall the edifice itself. How long have the mind and the spirit ever been able to preserve their freedom within such limits? The answer has always depended on what could be called a sort of law of the conservation of the freedom and courage of the mind and the spirit. The truth is that freedom is never permanently destructible; its energy is conserved and asserts itself in some new motive.

It is of interest and of significance that in some form or other there is ever a basis of expediency in attempts of the free mind to limit itself. Often expediency is concealed in a mirage of quasi-idealism, but, when the full revelation is made, the foundation of expediency lies bare. That which is proposed is to be done in the name of physical efficiency; in order to afford more of this comfort; to fulfil more of that physical need. It is never to be done in the name of freedom of the mind and the spirit, as though these ends did not transcend all others.

Such then are some of the elements in the perspective of freedom, as she has survived down through the ages, oftentimes a gloomy one, but, for the courageous, never hopeless. The perspective, as we have noted, is that formed by the movements of antagonistic forces. If liberty be torn down now in this everlasting conflict, soon with pure strength she rises again. Whether freedom appears to be overthrown or not, whether in a survey of the universe she is seldom to be seen, she is never really lost, any more than energy is lost which changes its form. In the vast perspective the periods of freedom dominant emerge again and again and then there is a golden age. Those periods begin when the upsurge of the primal human desire for freedom becomes sufficiently powerful to sway the collective mind and when leaders stand forth to crystallize the expression of that desire in words or actions sufficiently impressive. Yet at all times the seers among us are able to perceive that the cause is not lost. In all ages are examples to prove this.

A very great king, our beloved George the Fifth, began with these words the first broadcast in history of a monarch to his peoples over the sea: "My life's aim has been to serve." He, then the most secure and in that sense at least the most powerful king, averred his life's aim to be not rule but service. Thus did he confirm his native membership of the association of the free, out of natural love, you may be sure, for the beauty of the liberty with which the mind may course for human good, but well knowing out of his wisdom, as you may also be sure, that in that medium it may seek good with the utmost completeness.

When he, whom posterity may well consider to have been at once the most inspiring and the most effective of all the mortal leaders in history, uttered in 1940 his gloriously defiant message that Britons would perish, if necessary, fighting through the streets in the face of imminent and apparently overwhelming hordes, it is reasonably certain he was moved by thoughts of preserving the freedom of British bodies to procure those

substances which mean survival, but far more that, as he was a Briton whose very soul was freedom, there surged within him some elemental aspiration to save, for the very sake of freedom, the freedom of the human mind to see philosophical and spiritual good, wherever it found them. Freedom of the mind was the end in itself.

When Burns wrote in the everlasting ode on Robert Bruce's address to his men at Bannockburn,

Wha for Scotland's King and law,
Freedom's sword will strongly draw,
Freeman stand or freeman fa'
Let him follow me!

he was warmed, as he himself described it, in his solitary wanderings, to a pitch of enthusiasm on the theme of liberty and independence. He laid the emphasis on the call for the Scotsman's own king and own law. While he constantly saw the irresistible appeal of the things of nature that were Scotland's own, when freedom was the theme, to his mind it was, as indeed it must be to all true minds, the freedom of his compatriots' minds to choose their own rules, their own mode and course of life and their own codes of law. To be sure, his own mind lived in and was nourished by the freedom of his spirit. Indeed the unbounded spiritual freedom of geniuses like Robert Burns has contributed as much to the happiness of mankind and its intellectual progress as any known influence, except perhaps the surge of man's own mind towards freedom.

In our immediate present we see evidences of the living spirit of freedom: sometimes on the grand scale, sometimes less obtrusive. The better half of the world applauds to a man when statesmen proclaim the Four Freedoms. A British judge upholds the suit of the villagers of Stevenage against the Government for its purchase of their village for the transfer of portion of London's surplus population. The Press and the people approve this assertion of the individual's exemption from the right of careless dispossessing by the State. Priestley, at least a competent publicist, says Britain is in danger of failing in her post-war effort because the psychology of the people, so decisively present during the war, has been lost. The motive for a peace-time triumph is absent, because the freedom of the individual's mind and spirit has been submerged in the excessive domination of the State. Yet there are already signs of the awakening of the sleeping spirit. The lovers of Britain know that that spirit of freedom has slept before, but has invariably come to, refreshed. We can be bold enough to prophesy that ere long governments will restore her freedom, for Britain has never indefinitely tolerated its curtailment. Indeed it is part of the genius of Britain that she can at all times re-create liberty. At those times people have said, like Hancock in his classic letter in 1940, that Britain has rediscovered her soul.

Some may ask, is it not too late to pull back, have we not already yielded our minds to the State beyond recall, have we not indeed become engulfed? As we have seen, history answers these questions. Freedom of the mind and freedom of the spirit are never quite destructible, never irrecoverable. The outweighing reason of this is that freedom is, above all its other attributes, a thing of the spirit. As Quiller-Couch says: "That all spirit is mutually attractive as all matter is mutually attractive, is an ultimate fact beyond which we cannot go—spirit to spirit—as in water face answereth to face, so the heart of man to man." Carlyle expressed the same original fact, strangely enough, in these almost identical words: "For in spite of all casual varieties in outward rank or inward, as face answers to face, so does the heart of man to man." The spiritual is primal, there waiting to be called up, it is of the mind and heart. Freedom is it and is born of it, all freedom, not least the freedom to produce social and individual good. Will you but strike the chord of spirituality and the sound that comes forth will be the harmony of human good. But if you weigh down the freedom which is spirituality with the burden of vast, unnecessary, useless knowledge or restrain it with limits, artifices, rules and dampers, then the spiritual will fail to be awakened, the stimulus will pass unnoticed and the opportunity to produce good will be unapprehended. Let there be a voice from leadership,

long, loud, incessant, let it call to the world and especially to that part of the world which understands freedom, let its message be: redeem to us the freedom of our minds to roam at their will in search of human good and the freedom of our spirits to drive us on in the search, subject only in our course to Christian ethics and the common law. Let that be the message and then the heart of man will so respond to the heart of man that freedom will at length return.

The quality, the attributes and the measure of freedom are for medicine almost coeval with itself. Freedom is of the quality of medicine, as medicine, adequately conceived, is also a thing of the spirit. It was part of the greatness of the fathers of medicine, perhaps the most important and undoubtedly the most abiding part, that when in antiquity they stated their creed, its foundation was liberty of the mind and of the spirit. The *Oath* itself is a grand implication of freedom, for as it idealizes the relation of the doctor to his patient, and enjoins the doctor to set every other interest behind the patient's interest, so surely does it imply that in fulfilling this injunction he must not be beholden to a third party. Hippocrates himself lived in the golden age of philosophical freedom in Greece, when the most present danger to medicine was the domination of the doctor's mind by superstition and dogma, against which also he uttered specific admonitions. This original qualitative unity between medicine and freedom has been admirably indicated by Castiglioni when he says: "But in its essence, in the clear intention of elevating the cure of the patient to be the chief aim of medical art, without having recourse in any way to priestly rites or to divine aid, it is evident that those who took this oath were physicians who practised their art in freedom and taught it in freedom."

The doctor, then, began his history in freedom and with few intermissions has continued to build under its impulse and its influence. To him the indispensable condition was that his mind, impelled by his spirit, might move in whatever direction the light appeared. His physical liberty was never in jeopardy, except at times in common with that of his compatriots or in the Middle Ages, when to state or practise a scientific truth, which was not dogma, was liable to be rated heresy. It is therefore not in the least surprising that the history of medicine, like that of all the sciences, is one of almost uninterrupted progress, except when in those same Middle Ages, because neither the mind nor the spirit was free, the search for knowledge was inhibited and its spread impeded. For this progress, too seldom visualized by doctors themselves in all its splendid perspective, three main factors have been responsible, the inspiration of the art itself, the passion of the human mind for knowledge and the freedom of the mind itself. Ultimately these three are one and the same.

Like freedom in its full estate, freedom in medicine has survived from time to time, as we have seen, down through the ages, onslaughts from man-made movements. Yesterday and today the signs and the beginning of the heaviest engagement have been witnessed. This threat to the survival of freedom in medicine is perhaps the most considerable in its history, the more dangerous because it is made in the name of the people, albeit in the assertion of a false right, and, mark you, for purposes of expediency, by men who have compromised the freedom of their own minds with the theory of an all-powerful State. They stand at the commencement of a boggy road, half-beckoning, half-ordering medicine to join the expedition and enter the quagmire; but, not possessing, like a hundred generations of doctors, the insight or the imagination to foresee that few things could so enfeeble the body and the mind as an endless, black-soil plain. Because this movement against medicine is part of a wider movement which has proceeded, virtually unresisted, against freedom in other fields of human endeavour, some have said its success is inevitable, that it cannot be resisted. To deny its resistibility is to deny all history; is to deny the influence of great men and great artists, of Pericles, of Lincoln, of Churchill, of Plato, Shakespeare, Beethoven and Burns; is to deny the pathfinders of medicine who strode over their obstacles

with magnificent dignity and freedom, the Harveys, the Listers, the Murphys, the Mackenzies; in a phrase, to deny the transcendency of the freedom of the spirit and the spirit of freedom themselves. Let there but be a pure cause and the consciousness of freedom and the domain shall be preserved from encroachment.

In different ages and in different countries there have existed associations of doctors, banded together under a constitution, usually an elastic one, in which the unwritten precept was even more authoritative than the written rule, or, as in ancient Greece, bound by nothing more than their individual subscription to the Hippocratic code. Of them all by far the most influential have been the brotherhood of Greek physicians and the modern British and American Medical Associations. It is a singular circumstance and not, it may well be considered, an accident, that the foundation documents of both the British and the American Medical Associations not only bear a striking resemblance in meaning to each other, but, also in respect especially of their strong implication of the right and existence of freedom, to the code of the Greeks. Indeed this could not have been an accident, for medical men in all ages must have striven under the same inspiration to produce good and under the same conception that freedom of intellectual approach to their work is fundamental and indispensable, if there are to be efficiency and contentment.

All that we speak here of freedom has perhaps added import for the young men of medicine. There will be occasions when the temptation will be held out, maybe from quite respectable quarters, to compromise their liberty. Experience has ever proved that to hold fast to principles and to sustain the spirit of freedom is the most certain means of remaining at peace with your soul. Even if for the time to be steadfast entails material loss, the reward of a spirit fortified by high-minded constancy will be ample repayment. I should like to quote for them some very beautiful lines which, as they are written of the young men of Eton who sacrificed themselves in the Boer War, may be considered appropriate:

The boy-beauty passed from off the face,
And many tears made mist upon their eyes,
And thoughts beyond their thoughts the Spirit lent,
And to them came a great presentiment
Of high self-sacrifice.

Need I say that those of us who have already travelled varying distances along the road will have a mind for the care of young men and women of medicine, many of whom have already made some sacrifice?

As I forecast at the outset, this address has been mostly of freedom of thought and freedom of the spirit. This is a day of new charters, of the restatement of old truths. A world whose sense of values has been governed for a while by the need to lower the level of all freedom in order that the whole corpus might survive, a world whose new plans are being wrought before its mind and its spirit have been freed, a world half of which indeed still knows no form of freedom whatever, needs to be recalled to a sense of indispensable values and to reform its structures in the pure oxygen of freedom. Medicine is the first vast, honourable institution to be attacked. For it there should be a fresh statement of an old charter, and it should be *habeas ingenium*—the doctor shall have the right to his own intellectual ability, to employ it where and how the free spirit drives him, governed, as we have said, only by ethics and the common law. For others, it is necessary that they should acknowledge this right. For us, if we do retain but one virtue, we can never be deprived of it. Our spiritual foundation is so reinforced after centuries of endeavour that courage is all we need to hold it secure. "Courage", says Barrie, "is the thing. All goes if courage goes."

What says our glorious Johnson of courage: "Unless a man has that virtue he has no security for preserving any other." We should thank our Creator three times daily for courage instead of for our bread, which, if we work, is surely the one thing we have a right to claim of Him. This courage is a proof of our immortality, greater even than gardens "when the eve is cool". Pray for it. "Who rises from prayer a better man, his prayer is answered."

TREATMENT OF CARCINOMA OF THE LARYNX

By R. M. GLYNN,
Honorary Aural Surgeon, Royal Adelaide Hospital.

IN presenting the results obtained in a series of cases of carcinoma of the larynx treated by me, both at the Royal Adelaide Hospital and in private practice, I realize that the numbers are comparatively small. However, I think it is desirable to stress on the one hand the hopeless outlook for these patients if they are not treated early, and on the other hand, the comparatively high rate of cure in early cases. This I believe can be done only if all one's cases are reported.

PATIENTS WITH SECONDARY DEPOSITS IN GLANDS.

I shall first of all discuss the patients treated at the clinic of the Royal Adelaide Hospital, who were found on clinical examination to have enlarged glands in the neck. During the ten years ending in June, 1946, 42 of these patients were examined at the various clinics at the Royal Adelaide Hospital. All these patients died, irrespective of the treatment carried out. In four cases the condition was too far advanced for any form of treatment to be attempted. In one case, diathermy was used in an attempt to eradicate the growth; in one case some form of radium was used, but the details are missing; and in the rest of the cases, deep X rays were used. In two cases an attempted laryngectomy, and in one case an attempted lateral pharyngotomy, disclosed enlarged glands in the neck. In each case the operation was abandoned, and one of the patients was subsequently treated by irradiation. All three died.

From this it is obvious that the present prognosis for the patient with carcinoma of the larynx accompanied by secondary deposits in the glands of the neck is almost hopeless. Two of the patients for whom surgical treatment was attempted were under my care, and I have since then abandoned attempting operative removal in the face of secondary deposits in the glands.

PATIENTS WITH NO SECONDARY DEPOSITS IN GLANDS.

Patients Treated by Irradiation.

During the ten-year period, 19 patients in whom no enlarged glands in the neck were detected were treated by irradiation. All except one died. Three of them, including the patient who is still alive, were under my own care. In these cases, one of the lesions was possibly not a true laryngeal carcinoma, and had probably begun in the base of the tongue, whilst a second patient refused operative treatment although the condition was considered operable. The third patient was a man for whom a laryngectomy was attempted. When the initial skin incision was made, thin purulent material was encountered in the muscle planes of the neck. It was considered that he probably had a broken-down carcinomatous gland, and the wound was closed again. He was treated by deep X rays, and has remained well since December, 1943. One other patient, not my own, died of bronchopneumonia after completing his course of irradiation. No signs of carcinoma were found at the post-mortem examination, but I cannot regard this as conclusive, and feel that a case of this nature is better left out of consideration.

With regard to the remaining patients, it is to be regretted that the records do not give sufficient information to enable one to say whether they would have been suitable for operation or not. Consequently it is difficult to compare them properly with the patients subjected to operation. At least four were certainly unsuitable for operation of any sort. During the period under discussion, seven patients were considered unsuitable for any form of treatment.

Patients Treated by Operation.

Patients were considered suitable for laryngofissure if the lesion was confined to one vocal cord, or to one vocal cord and the anterior end of the other vocal cord. It was considered necessary that the cord should be freely movable.

Patients treated by laryngectomy are divided into two groups. Those with lesions confined to the interior of the laryngeal box were considered suitable for the modified type of operation introduced by Crowe. Patients requiring more exposure or complete removal of the muscles would need the classical operation.

Patients Suitable for Laryngofissure.

Only three patients have been found who were suitable for laryngofissure. Two have been operated on and have apparently remained free from recurrence for ten years and for six years respectively, and the other was recently treated.

S.B., aged fifty-nine years, reported on August 10, 1936, complaining that he had noticed that his voice had been growing hoarse over the last few months. Laryngoscopy revealed a small red raspberry-like tumour on the right vocal cord. A specimen was taken at biopsy, and pathological examination revealed squamous-cell carcinoma. On September 1, 1936, a laryngofissure was performed, with removal of the right vocal cord. The patient made an uneventful recovery, and has remained well since. He was given no irradiation.

R.S. reported on April 14, 1940, complaining of hoarseness of some months' duration. He was aged fifty-eight years. Laryngoscopy revealed a small tumour on the anterior portion of the right vocal cord, which proved on microscopic examination to be a squamous-cell epithelioma. On April 15, 1940, a laryngofissure was performed, with the removal of most of the right cord and of a little of the anterior portion of the left cord. The patient developed pneumonia following the operation, but this cleared up after he had been given sulphapyridine tablets. He had a post-operative course of deep X rays. The patient has remained well since.

The third patient, J.V., complained of hoarseness of eighteen months' duration, and had an ulcer on the anterior portion of the right vocal cord. A laryngofissure was performed, with removal of the right cord and of the anterior portion of the left cord. He is apparently well.

Patients Suitable for Laryngectomy.

I am dividing my patients subjected to laryngectomy into two groups: (i) those in whom the classical operation was performed with removal of the laryngeal muscles; (ii) those in whom a modification of the Crowe type of laryngectomy was performed. It must be remembered that since 1939 we have also had the benefit of the sulphonamides and penicillin, and this has considerably reduced the post-operative mortality.

Two classical laryngectomies were performed prior to 1939. One patient died of mediastinitis after his operation, and the other remained well for five years but died of heart disease. Since 1940, I have performed five laryngectomies of the Crowe type. Peculiarly enough, I have not during this period seen a patient whose growth I considered operable, and for whom I considered a classical operation necessary.

The operation used in the five cases to be discussed was a modification by Martin and Trotter of Crowe's muscle-sparing operation. The sterno-hyoids are saved, but in the last three cases the sterno-thyroids and the thyro-hyoids were removed with the larynx. The operation is commenced with local anaesthesia if possible, and the trachea is divided early in the operation and stitched to the skin. The anaesthetic agent can then be administered through the upper end of the trachea while the removal of the larynx is proceeded with. After removal of the larynx and closure of the pharynx, the sterno-hyoids are double-breasted in front of the pharynx. A rubber drainage tube is inserted deep to the muscles from one side of the neck to the other, and the wound is washed through with penicillin solution after operation.

In the two cases of patients J.H. and J.C. a sub-perichondrial dissection was performed with retention of the sterno-thyroids and the thyro-hyoids. After this, I followed Hayes Martin's teaching⁽¹⁾ and adopted the procedure described above. I believe that the removal of the pre-laryngeal glands and of the traumatized deeper muscles makes the operation safer and simpler.

The following are the five cases.

J.H., aged forty-one years, reported on July 1, 1940, complaining of increasing roughness of his voice. A carcinoma involving the left side of the larynx was present, and

examination of a biopsy specimen revealed an actively growing squamous-cell carcinoma. He was operated on at the Royal Adelaide Hospital on July 15, 1940, and has shown no signs of recurrence. No irradiation was given after the operation. He has carried out his work as a travelling salesman since shortly after the operation.

G.T., aged forty-five years, was first examined on November 10, 1944. There was some doubt about his chest condition, as the radiologist had reported as follows on two separate dates. On December 21, 1943, an opacity had been seen including and surrounding the right hilum; it was thought to represent an inflammatory or a neoplastic process, but the appearances did not resemble tuberculosis. On November 14, 1944, the opacity in the right middle zone was seen to have increased in extent; it was limited to the middle lobe of the right lung, and was suggestive of collapse of the bronchus supplying this lobe. The radiologist thought that a metastasis might be present in this area. The patient had had some pain and difficulty in swallowing for three months. The Wassermann test failed to produce a reaction. The patient desired to have an operation performed, and I thought it unlikely that his chest shadows were carcinomatous, in view of their known existence over such a considerable period. In his larynx an ulcerative lesion was present involving both vocal cords. Operation was performed on November 21, 1944, and he has remained well since. He was given a post-operative course of deep X rays. The patient is a fisherman, and he has devised a sort of periscope which enables him to swim.

J.G., aged thirty-eight years, was first examined on July 29, 1945. Examination revealed an ulcerated condition involving the left vocal cord and the left subglottic area. A laryngectomy was performed on August 20, 1945, and no irradiation was given. The patient returned to his work as a shoemaker and has remained well since.

J.E., aged forty-seven years, had a history of intermittent loss of voice for some years, the loss having become constant during the last few months. He was first examined on October 14, 1945, and examination of his larynx revealed extensive involvement of both true and false vocal cords. Examination of a biopsy specimen revealed squamous-cell carcinoma. Operation was performed on November 5, 1945, and he was given a course of deep X-ray treatment. He subsequently returned to his work as a tobacco packer.

There was one failure.

J.C. reported on August 10, 1944, with a bilateral subglottic lesion, which examination of a biopsy specimen showed to be a carcinoma. A laryngectomy was performed on August 17, 1944, and he made an uneventful recovery. He was sent home, but returned a month later with a recurrence in the scar. This was treated with a course of deep X-ray therapy, and he died about four months after his operation.

Comment.

It will be noticed that two of the patients who remain well had no irradiation, and that two were given a course of irradiation after their operation. I believe that a complete removal is to be aimed at, and that very little reliance should be placed on irradiation. However, I have not enough cases to be definite on the advantages of irradiation after operation.

The present series, of course, is only a small number of cases, and some of them are very recent. However, the fact that five patients operated on survived the operation, and that four of them remained well for periods from twelve months to six years after the operation, warrants, I think, the conclusion that at the present moment this type of operation is probably the method of treatment that holds out the best prospects for this group of patients.

PHARYNGEAL TUMOURS.

Three patients with pharyngeal malignant tumours have been subjected to operation. The first patient, a woman with a carcinoma of the post-cricoid region, was operated on twelve years ago. A Trotter's transthyroid pharyngectomy was performed, and a large skin flap was turned in to replace the gap in the hypopharynx after the removal of the carcinoma. The patient unfortunately died of infective mediastinitis. The second patient, a man with a fibrosarcoma involving the right pyriform fossa, was operated on in April, 1931. A transthyroid pharyngectomy was performed and the tumour was removed. He remained well until 1940, when he reported with a recurrence involving his trachea, which it was

impossible to remove. I think he could have been saved if the recurrence had been detected earlier. This case has been reported elsewhere.

The following patient was operated on on February 22, 1943, and her case is now reported for the first time.

Mrs. L.W. consulted me on January 23, 1943, complaining of a feeling of a sore throat after swallowing for about six months. In her words, "the throat seems to close up". She thought she had a little difficulty in swallowing. She had lost no weight. On examination of the patient with a laryngoscopic mirror, the raised edge of a tumour mass was seen projecting behind the arytenoid cartilages in the post-cricoid region. The area visible was small.

On January 26, under anaesthesia, the post-cricoid region was examined with a laryngoscope. A mass with a slightly ulcerated surface was present in the posterior wall of the oesophagus. It was about three-quarters of an inch across and was raised about one-eighth of an inch above the surface. The lower level of the growth was not visualized. A piece of material was taken for biopsy, and later the pathologist reported the growth as a squamous-cell carcinoma.

On February 22, under ether anaesthesia, a Trotter transthyroid pharyngectomy was performed on the left side. A flap of skin was turned back with its free edge anteriorly. After the pharynx was opened, a tumour was found to be present on the posterior wall of the hypopharynx, about one inch in its supero-inferior diameter. The tumour was removed with a surrounding area of healthy tissue, and the edges of the hypopharyngeal wound were sutured to the skin. It was actually unnecessary to use much of the skin flap. The patient made an uneventful recovery, and on June 23 the pharynx was closed under anaesthesia. No irradiation was given. The patient, of course, has a left-sided laryngeal paralysis, but she has remained perfectly well since her operation, and when she was last examined in May, 1946, no signs of recurrence were visible.

Comment.

This is, of course, a very small number of cases; but it does at any rate show that some of these patients are worthy of operation.

Acknowledgement.

I have to thank the Director of the Radiotherapy Clinic at the Royal Adelaide Hospital, and the Board of Management of that hospital, for permission to include records of patients treated under the supervision of the Radiotherapy Clinic.

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CALCIFICATION OCCURRING IN THE EYE.

By P. B. ENGLISH,
Brisbane.

THE deposition of calcium salts in tissues other than bone has been recognized for a long time, but a good deal of attention has been focused on this phenomenon in later years by the elucidation of calcium metabolism. Calcium is one of the elements essential to life, and the blood calcium content in health throughout life remains remarkably constant at about 10 milligrammes per 100 millilitres of blood.

When calcium is deposited in the regular pattern typical of bone the process is called ossification, and when it is deposited in irregular clumps the process is referred to as calcification. Remarkable similarity is noted in the chemical composition of the deposits; in either case they are made up of nine parts of calcium phosphate to one part of calcium carbonate. In ossification the deposition occurs to a regular pattern, being controlled by osteoblastic cells, and in calcification there are irregular clumps of granules.

Boyd states that calcification may ensue as a result of hypercalcæmia, such as that due to repeated injections of parathyreoid extract. However, more often calcification occurs independently of the state of the blood calcium,

both as a senile degeneration and as a terminal event in post-inflammatory fibrosis, and it may progress to the formation of bone.

It is also recorded by Boyd that the most usual organs for the deposition of calcium salts due to hypercalcemia are the lungs, kidneys and mucous membrane of the stomach. Calcification following post-inflammatory fibrosis may occur in many parts of the body—for example, in caseous tubercular areas of the lungs and many other organs. It is intended to give special attention to calcification occurring in the eye.

The Eyelids.

Calcification may take place in the tarsal plate in cases of trachoma of long duration, and may even progress to bone formation (Wilson).

Concretions may occur as minute hard yellow spots in the palpebral conjunctiva of elderly people or after chronic inflammation. They consist of the products of cellular degeneration which are retained in small depressions and recesses (Henle's glands) of the conjunctiva (Fuchs). Each recess has a double layer of lining epithelium irregularly atrophied and thickened, the inner layer being of cubical shape and containing goblet cells (Wintersteiner). As a rule each cystic lumen contains one concretion, but may contain more, and is surrounded by an area of inflammatory reaction.

A mucoid substance often surrounds the concretion, which is added to by accretion until it may finally protrude through the mouth of the gland. Rarely does actual calcification take place, and so the term is rather a misnomer.

Hyaline or colloid degeneration occurs as part of disease, particularly trachoma (Herbert), in which large quantities of amorphous material of the consistence of half-cooked potato are found on the conjunctiva, especially on the upper lid and caruncle. With the progress of the disease the conjunctiva of the upper lid may completely disappear, the tarsus being invaded and the lid becoming thicker, harder and heavier, and the terminal stage may be calcareous degeneration.

Calcareous deposits in the conjunctiva are uncommon; but cases have been recorded (Mazzola) following spring catarrh (Uthoff) and after erysipelas of the lids (Verderame). Early in the century what was termed *conjunctivitis petrificatus* (Leber) received a good deal of attention; but subsequent investigation disclosed that the condition was really due to artificial impregnation of the conjunctiva with lime salts, usually by hysterical young women (Sidler-Huguenin).

Ossification has been recorded in tumours (dermoid cysts and osteomata) (von Graefe), and as the terminal stage of hyaline degeneration and trachoma (Vossius).

The Cornea.

Calcareous degeneration of the cornea may be either primary or secondary in origin.

The latter type frequently occurs in conditions similar to hyaline degeneration, such as band-shaped corneal opacities, atheromatous ulcers and other similar complaints. Calcium salts are deposited first as granules, which later form nodules, being mainly confined to Bowman's membrane and the superficial layers of the *substantia propria*.

Primary calcareous degeneration (*dystrophy calcarea cornea*), a massive deposition of calcium salts, occurs in the superficial layers of the *substantia propria*. The condition commences around the periphery of the cornea and extends to the centre (Axenfeld).

The Chorioid.

Degeneration sometimes follows the inflammatory exudates of plastic chorioiditis and this may result in calcification and perhaps ossification. Hyaline deposits on the inner surface of the membrane of Bruch are separated from the blood vessels of the chorioid by that membrane, and in these usually only calcification results; but if the membrane should rupture and vascularization ensue, then

ossification may result. The commonest sites of ossification are in close proximity to the optic disk and also in the neighbourhood of the *ora serrata*.

Commencing from both these situations, extensions may proceed until the two areas unite and a cup of bone is produced, a small area being left for the entrance of the optic nerve.

The process of calcification and ossification in the chorioid is usually slow and occurs generally in blind and sunken eyes (Collins and Mayou).

The Sclera.

Duke Elder states that calcareous degeneration of the sclera is not uncommon, but very few cases are reported in the literature. In Parson's opinion, calcification occurs as the terminal event in post-inflammatory fibrosis or as a result of senility, and the scleral lamelle show an apparently normal histological appearance after the lime salts are removed. According to Krekeler, infiltration of fat and deposition of calcium occurs in between, but not actually in, the fibrils, the salt being either calcium phosphate or calcium carbonate (or both). The phosphates are more common and occur in the form of coarse granules. The deposition of calcium may be either local, in which case it is usually near the insertion of the muscles, or general, an almost complete cup being in evidence. According to Krekeler, the equatorial region is the site where calcification is most often encountered; but Attias believes that the posterior portion of the sclera is most often involved.

Pagenstecher, in an article published in 1860, reported a case in which calcification of the lens, chorioid and retina as well as of the sclera occurred in an atrophic eyeball. The deposition was in the anterior portion of the sclera near the ciliary muscle, and the presence of smaller and larger "Drusen-like bodies" round the margins indicated that the process was spreading in various directions. After the removal of the calcium salts the scleral fibres appeared to be normal histologically.

Katz pointed out the likelihood of primary localized necrosis with secondary deposition of calcium salts, because in his case, after the removal of the calcium salts, the scleral fibres and those immediately around were greatly changed and were devoid of nuclei.

Klein-Moncreiff reported two cases in which a histological examination was made; deposition of calcium salts had occurred just anterior to the insertion of the internal rectus and the scleral fibres were devoid of nuclei.

Report of a Case.

W.M.C., aged forty-eight years, sustained a penetrating wound of his right eye in 1916, for which he received surgical treatment. He had some vision in the eye for a number of years, but it gradually deteriorated; the eye became blind about 1930. Unfortunately no record of this vision is obtainable. For the last two years he had begun to suffer from severe headaches over the right frontal area, which were not confined to any particular period of the day, but were aggravated by glare—a fact which was noticeable because of the white sandhills where he was stationed.

On examination, the right eye had no perception of light, nor did the pupil react to light or accommodation. In the periphery of the cornea diffuse sclerosis was found, and there was a sharply defined corneal opacity about two millimetres from the limbus at the eleven o'clock position. The iris had a wide surgical coloboma in the upper and outer portion, and through this and the pupil the obviously opaque lens could be seen; but the fundus was not visible. Tension was lower than normal, measuring twenty millimetres with a Schiötz tonometer. X-ray examination revealed extensive calcification of the posterior portion of the eye, which also extended forwards into the lens; these features are well shown in Figures I and II.

The visual acuity of the left eye was $\frac{1}{10}$ ($\frac{1}{20}$), the fundus was normal, the media was clear and the eye was emmetropic. X-ray examination of the left eye revealed no abnormality. Movements of both eyes were normal. As no relief from the headaches was obtained, the eye was enucleated. Microscopic examination of sections disclosed extensive calcification involving the sclera, lens and vitreous; it was impossible to identify the retina and chorioid. In this case the blood calcium content was 15 milligrammes per 100 millilitres, and the condition appears

to have fibrosis.

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A communication from the patient twelve months later disclosed that the headaches had disappeared.

Summary.

A brief résumé of the literature of calcification of the eye is given and a case of calcification of the sclera is reported.

Acknowledgements.

My thanks are due to the Director-General of Medical Services for permission to publish this paper, and special thanks to Major L. Laurie and Major G. Donnan for advice about the specimen and the films respectively.

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Reports of Cases.

A RARE TYPE OF GENERALIZED TUBERCULOSIS.

By DAVID ROTHFIELD,

From the Department of Pathology, University of Sydney.

Clinical Record.

THE patient, a woman, aged sixty years, was admitted to the Royal Prince Alfred Hospital on April 4, 1944. Four months previously she had noticed, in the left side of her neck, a swelling "about the size of a plum", which she described as having subsided for a time, but as having subsequently grown to a larger size than before. For the past twelve months she had felt tired and listless, and in the six months prior to her admission to hospital she

had lost over two stone in weight. She had had no swelling in any other situation, nor had she suffered from cough or dysphagia. She had had no difficulty with micturition or defecation; menstruation had been regular until the age of fifty years, when it had ceased. She had never had abdominal pain or any other symptoms.

In the left posterior triangle of the neck was found a group of enlarged lymph nodes, of firm consistency, not tender, and not freely movable beneath the skin. No other accessible lymph nodes were similarly affected. Neither the liver nor the spleen was palpable, and no ascites was present. Auricular fibrillation was present, and the apex beat was irregular at the rate of 150 per minute, and the radial pulse rate was 100 per minute. The systolic blood pressure was 140 millimetres of mercury, and the diastolic pressure 80 millimetres. Apart from this, the heart, chest and nervous system were normal, and examination of the ears, nose and throat failed to shed any light on the

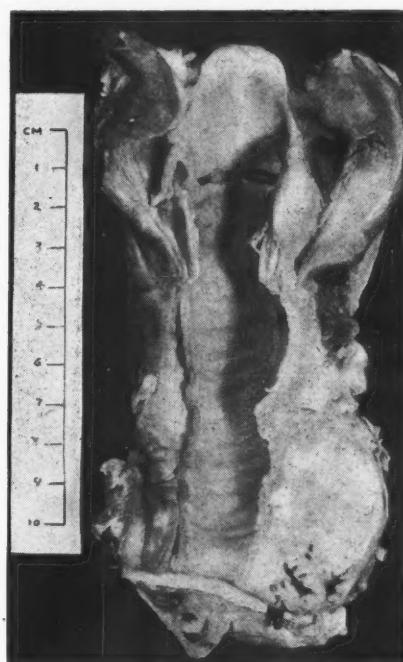


FIGURE I.
Larynx, trachea and mediastinum.

cervical swellings. The patient was mildly pyrexial, having a nightly rise of temperature to 99° to 100° F. A blood count soon after her admission to hospital showed the haemoglobin value to be 12.6 grammes per centum; the leucocytes numbered 16,700 per cubic millimetre, 78% being neutrophile cells. The blood gave a negative response to the Wassermann test and to the Kline test. An X-ray examination of the chest and of the stomach and duodenum after an opaque meal also yielded negative results.

The suspicion that the lump in the neck might have been metastatic carcinoma was dispelled when, during the next fortnight, the mass became soft and finally showed clear signs of "pointing". On April 20 it was incised under anaesthesia, and a quantity of pus was obtained; it was found to be sterile, and no acid-fast bacilli were found in the direct smear. The operation was of little benefit to the patient. Another loculus of the abscess soon formed in the suprasternal notch, and after a few days discharged through the existing sinus, which at the same time grew deeper, exposing in its floor the external jugular vein. A blood count on May 18 revealed a fall in the haemoglobin level to 10.6 grammes per centum,

while the leucocytes numbered 13,600 per cubic millimetre, the cells being mainly neutrophile.

On June 1 a further attempt at surgical drainage was made by the insertion of a tube into the abscess through an incision above the medial end of the left clavicle. At the same time necrotic material was curetted from the old sinus and sent for histological examination. Dr. J. S. Robertson reported that it presented the features of chronic pyogenic granulation tissue, with numerous giant cells, but that he was unable from the histology to exclude tuberculosis. The pus which continued to be discharged from the sinus was still sterile, and steps were taken to investigate it for tubercle bacilli by attempted culture and inoculation.

The patient's general condition was meanwhile steadily deteriorating. She had irregular but persistent evening pyrexia, the temperature often reaching 101° or 102° F. The anaemia increased and failed to respond to either iron therapy or blood transfusion; the haemoglobin level had fallen early in June to 7.9 grammes per centum. Towards the end of June there appeared near the lateral malleolus

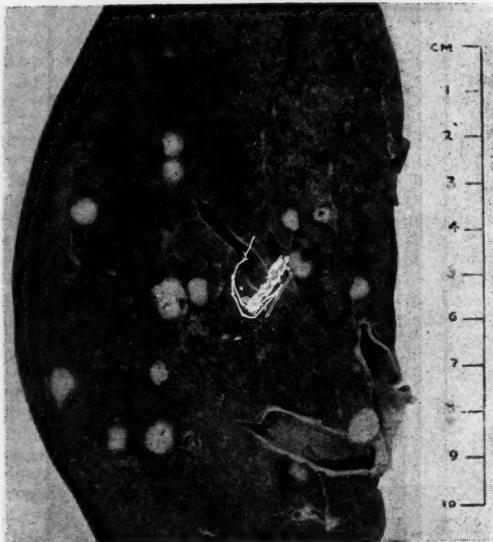


FIGURE II.—Liver.

of the right ankle a fluctuant swelling, somewhat tender, which gradually increased in size. Ten days later it was incised; some thick pus was evacuated, and this too was sterile on ordinary cultural examination. Clinically the patient's illness was now regarded as chronic pyæmia of obscure nature; as yet no positive bacteriological information had been obtained. The patient grew weaker, and death occurred on August 21, 1944.

Post-Mortem Examination.

The autopsy (Pathology Department, University of Sydney, Number 5275) was performed five hours *post mortem*. The body was wasted in general appearance. Two sinuses opened superficially in the neck; one large and deep, in the left posterior triangle, exposed the omohyoid muscle, and a smaller one was present in the suprasternal notch. On the dorsum of the left foot was a sloughing abscess, measuring in area about ten centimetres by five centimetres, in the depths of which the extensor tendons were exposed; it contained creamy yellow pus.

The lymph nodes of the mediastinum were enlarged and caseous, adherent to one another, and in some instances breaking down in their centres (Figure I). The supraclavicular and jugular lymph nodes were affected in the

same way; those in the left posterior triangle had broken down, and were in direct communication with the sinuses in the skin. The diameter of these lymph nodes varied from 0.5 to 2.0 centimetres.

The tonsils appeared normal. The mucous membrane of the laryngeal aspect of the epiglottis presented a rough surface, due to the presence of a number of small shallow scars (Figure I).

No adhesions were found in the pleural cavities. The lungs were somewhat congested, but their texture was normal throughout, and there was no evidence of tuberculosis. The heart, which weighed 250 grammes, presented no abnormal features except a little atheroma of the coronary arteries; there were no thrombi in the coronary appendages. In the aorta a little fatty atheroma was found.

The liver presented a most unusual appearance (Figure II). Its substance was studded everywhere with pale, firm, nodular lesions, varying in diameter from 0.2 to 1.4 centimetres, the size of the majority being about midway between these limits. The nodules showed no evidence of breaking down nor of contamination with bile. While at first sight they resembled carcinomatous metastases, it was remarked that, when they were situated on the capsular surface, they did not show the "umbilication" commonly seen in such deposits.

The spleen (Figure III) contained two lesions, each 0.25 centimetre in diameter, resembling those found in the liver. An old infarct was also present, at the site of which the capsular surface was adherent to the liver.

The lymph nodes of the *porta hepatis*, those adjacent to the upper edge of the pancreas, and those at the splenic hilum, were all characterized by the same caseation and softening as were present in the mediastinal group. Some of the lower paraaortic nodes were affected in the same way; caseous pus from them had found its way on either side into the sheath of the *psoas major* muscle, forming abscesses, limited in each case to the abdominal portion of the muscle. There was no evidence of caseation in the bodies of the lumbar or thoracic vertebrae. The inguinal and axillary lymph nodes were unaffected, and no relevant abnormalities were detected in the gall-bladder and biliary ducts, the kidneys, the alimentary tract, the pelvic viscera or the brain.

Bacteriological Findings.

Material taken from the fluctuant swelling in the neck yielded a scanty growth of acid-fast bacilli, which were proved to be tubercle bacilli by guinea-pig inoculation. Tubercle bacilli were also isolated from pus obtained from the swelling over the ankle.

At the post-mortem examination of the patient pieces of mediastinal lymph nodes, liver and spleen were submitted for bacteriological examination. Tubercle bacilli were recovered on culture and by guinea-pig inoculation both from the lymph nodes and from the liver, but not from the spleen.

Histological Examination.

The Liver.—Each of the characteristic nodules in the liver consisted of an area of necrosis surrounded by a comparatively narrow zone of granulation tissue. This zone is illustrated in Figure IV, in which the edge of



FIGURE III.—Spleen.

the necrotic centre is seen towards the right of the photograph. The granulation tissue in some situations presented features seen in the granulomata, but for the most part these features were not striking. The tissue was largely avascular. On its central aspect, it comprised epithelioid cells with vesicular nuclei of contorted or ovoid outline and indefinite cytoplasm, and in places showing some tendency towards focal arrangement. Among the few giant cells present was an occasional one of the Langhan's type usually seen in tuberculous giant cell systems; but the majority contained a number of rather dark, closely aggregated nuclei and resembled that seen in Figure IV. The peripheral portions of this tissue contained lymphocytes and plasma cells, together with fibroblasts, which could be shown by stains for collagen to have laid down a network of fine fibrils. The nodule as a whole was circumscribed, but by the effect of pressure had caused atrophy of the surrounding parenchymatous cells. Fibrosis at its periphery was not striking. Because of its relatively large size, it was difficult to decide whether such a lesion arose in the portal tracts. Examination of smears and of sections stained by the Ziehl-Neelsen method failed to reveal acid-fast bacilli, and indeed on the histological appearance alone the tuberculous nature of these foci would be hard to establish. It may be added, for the sake of completeness, that in a block stained by Levaditi's method no spirochaetes were found.

The Spleen.—The nodular lesions (Figure V), though smaller, resembled the granulomata seen in the liver. Giant cells were more numerous and more typical, but here also there was little surrounding fibrosis. The larger lesion seen at the autopsy was an old infarct, bordered by mature fibrous tissue which contained altered blood pigment. In the remainder of the pulp some congestion was apparent, and the capsule was overlaid by hyaline fibrous tissue.

The Lymph Nodes.—Sections were taken from a para-aortic abdominal node and a mediastinal node. They showed similar features—widespread caseation, limited at the periphery of the node by poorly developed granulomatous tissue. The latter contained epithelioid cells and an occasional giant cell, but there were no focal giant cell systems and no fibrosis.

Comment.

Nodular lesions, of the kind found in this case in the liver and spleen, are among the rarest forms of tuberculosis in man. They may undergo progressive caseation, in the case of the liver communicating with the biliary tract, and forming tuberculous abscesses contaminated with bile. Should this not occur, the appearance of the lesions often simulates that of carcinomatous metastases or of gummatous. There are several specimens in the Museum of Pathology at the University of Sydney containing granulomata of doubtful nature which are suspected of being tuberculous; but proved cases are few.

Webster⁽¹⁾ records a case in which granulomatous nodules containing acid-fast bacilli, in some instances more than three centimetres in diameter, were found in the liver of a child, aged eleven years. The large lesions showed no tendency to softening and closely resembled gummatous. Histologically, the characteristic giant-cell systems of chronic tuberculosis were absent.

Mylechreest and Scott⁽²⁾ recently reported a case having some interesting features in common with that described here. Their patient, a seaman, aged twenty-six years, suffered from an atypical pyrexial illness of four months' duration, associated with *erythema nodosum*. At autopsy, tuberculosis of the lungs and pericardium was evident, and a large solitary caseating lymph node was found in the mediastinum. Nodular tubercles were present in the liver and spleen and to a lesser extent in other viscera, and near the head of the pancreas there was an enlarged, softened lymph node. Progressive skiagrams of the chest during life, and the changes present at autopsy, led these authors to believe that the primary lesion had been in the peri-bronchial lymph nodes, and that the disease had spread by direct infiltration to the hilar zone of the lung, but by infection of the blood stream to the other organs.

I have been unable to find previous records of tuberculous involvement of the lymph nodes, liver, spleen and subcutaneous tissue. A conspicuous feature of the individual lesions is the lack of fibrosis and typical giant-cell reaction surrounding the necrotic zone; it is of interest that in the other cases referred to such a condition was also found. The appearance of multiple lesions in the last-mentioned three situations, especially that of the terminal abscess on the foot, suggests the haematogenous dissemination of the tubercle bacilli. The clinical features suggest affection of the lymph nodes at a relatively early stage, and it seems likely that the lymph nodes formed the source of infection of the blood stream. How the infection gained access to the lymphoid tissues is a matter for conjecture. It is an interesting possibility that the scarring of the epiglottic mucosa is connected with a healed primary lesion; on the other hand, the tonsils, the bowel and the lung—all, in retrospect under a cloud of suspicion—were free from abnormality at autopsy and their histological examination was omitted.

The mode of entry of the bacilli from the lymphoid foci to the blood stream also raises interesting questions. According to the classical view, that of Weigert, such dissemination as that occurring in miliary tuberculosis results from the involvement of the wall of a blood vessel in the original lesion, with the direct entry of tubercle bacilli into its lumen. In a case such as this, however, there has evidently been widespread permeation of the lymphatic channels by the tubercle bacilli, and one may readily imagine that a number of the bacilli would reach the general circulation by the usual channels, and finally by the thoracic duct. Indeed, Auerbach⁽³⁾ suggests that on a smaller scale this is the usual course of events in blood-borne tuberculosis.

The outstanding clinical features of this case were, firstly, the prolonged and indefinite illness, and secondly, the latency of by far the majority of the lesions present.

Acknowledgements.

I am indebted to Professor Keith Inglis for his help and advice, to Mr. Woodward Smith, of the Department of Medical Artistry, for the photographs, and to Dr. Jean Armytage for the bacteriological reports.

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DERMATOMYOSITIS.

By DAVID L. DEY,

WITH AN AUTOPSY REPORT BY E. M. DAY,
From the Department of Medicine, University of
Sydney, and the Pathological Department, Royal
Prince Alfred Hospital, Sydney.

THE differentiation of dermatomyositis, a rare but well-defined disease entity, may be said to date historically from 1863. Although dermatomyositis is a rare disease, the present case is the third to have been observed in this department within the space of ten years. The two previous cases have been fully reported in *The British Journal of Dermatology and Syphilis*,⁽¹⁾⁽²⁾ and the present article constitutes only a general outline of the disease, together with the clinical findings and post-mortem report in the third case.

Of the many definitions of the disease in existence the following is probably the most satisfactory: "An acute, subacute, or chronic disease, of unknown origin, characterised generally by a gradual onset with vague and

indefinite prodromata, followed by oedema, dermatitis, and multiple non-suppurative muscle inflammation."

The disease was first described by Wagner in 1863, and later by Potain in 1875. However, no definite description was attempted until 1887, when cases were described by Hepp, Wagner and Unverricht in Germany. The first American case was reported by Jacoby in 1888, while that of Sir William Gower in 1899 was probably the first recorded in England. Since this time numerous reports have been made and there is now a comparatively extensive literature in connexion with the disease.

Aetiology.

The aetiology is unknown, and the usual array of suggested causative factors in such cases may be noted. An infective origin, ranging from a virus through the more common cocci to the ubiquitous tubercle bacillus, has been postulated. This rests upon the fact that the disease presents many of the clinical features of an infection, although no constant organisms have been demonstrated.

Vascular disease, endotoxins and exotoxins and allergic phenomena have also been blamed. The assessment of the relative values of such factors may well be left to the reader, and no good purpose will be served by further discussion of them here.

The disease occurs at all ages, the earliest reported case being in a child aged five years. However, most of the cases occur in early middle life. The sex incidence is equal, and the white races appear to have been almost exclusively affected.

Clinical Features.

The prominent clinical features of the disease are as follows: (i) characteristic facies—heliotrope discolouration particularly affecting the upper eyelids, with oedema and stiffness of muscles producing a mask-like expression; (ii) skin rash, (iii) oedema, (iv) swelling and fibrotic changes in the muscles, causing paresis and, later, contractures.

The onset is usually insidious, frequently following a febrile disturbance, often an upper respiratory tract infection. The prodromal stage, most often of some three weeks' duration, is characterized by vague symptoms of general malaise and weakness, with anorexia, vomiting and other symptoms of constitutional disorder.

The most constant and characteristic feature of the disease is the heliotrope discolouration of the upper eyelids. This may also have a "bat's wing" distribution over the nose and cheeks. Together with varying oedema and stiffness of the muscles, it frequently produces a facies which enables the diagnosis to be made almost at sight.

Besides the above observations there is an atypical dermatitis which affects other areas. It occurs chiefly on the exposed parts, but may extend somewhat beyond them. The rash is frequently symmetrical. The dermatitis is not always pronounced, and a review of the literature would suggest that the character of the rash varies. In chronic cases it has been stated to resemble such conditions as *erythema nodosum*, *erythema multiforme* or even *lupus erythematosus*, while it has also been described as erysipeloid, urticarial, roseolar or eczematous in the later stages. However, in the present case and in the two cases previously reported, the rash was erythematous and characterized by considerable scaling, the epithelium sometimes resembling tissue paper, while in one case the eruption became purpuric in parts shortly before the patient's death. This would seem to be the typical eruption. During remissions the rash may be replaced by some brownish pigmentation. Occasionally the rash may also exhibit a heliotrope discolouration resembling that seen on the eyelids.

The other chief change seen in connexion with the skin and its appendages is a falling of the hair.

With regard to the oedema and muscular changes, it is found that the affected part is swollen and painful on both touch and movement during periods of activity. The swelling is due partly to a hard oedema which does not pit easily on pressure, and partly to muscular changes. The overlying skin is red and warm and may show a rash.

The condition of the muscles varies clinically; in some cases they are soft and baggy, but in others they are firm, tense and tough, tending to pass into the latter condition with chronicity. The limbs are most often affected, but by no means exclusively, and as a rule symmetrically.

As far as general findings are concerned, the following are of interest. The temperature may be normal, but is frequently raised, when it may have a remittent or intermittent character. The pulse rate may be within normal limits or may be raised out of all proportion to any rise in temperature, indicating cardiac involvement. Albuminuria may be present, but the urine is usually without abnormal constituents. In the blood most frequently a slight neutrophile leucocytosis is found, but this may be absent on the one hand or pronounced on the other. No eosinophilia is present. The spleen may be moderately enlarged. Often pronounced sweating and itching are present. Stomatitis may be observed.

The joints are usually not affected, but may be swollen and painful, while in some cases osteoporosis may appear in the constituent bones. The brain is not affected, and no mental changes appear.

Course and Complications.

Cases vary a great deal, both in the duration and in the severity of the process. In acute cases the course is from one to two months, in subacute cases from six to twelve months, and in chronic cases from two to three years. The patients may go on to ultimate recovery, with or without residual damage, or to death. Death is most commonly due to one of the following three causes: (a) intercurrent infections, (b) inhalation bronchopneumonia due to weakness of the muscles of deglutition and respiration, (c) general asthenia, myocardial degeneration, and failure of the circulation.

In chronic cases the oedema subsides, the skin and muscles undergoing fibrotic changes. This produces contraction deformities, most commonly at the knees and elbows. The muscles may be felt as tense, wasted bands, which have little or no power of contraction. The patient may be weak or even helpless. The tendon reflexes are absent for obvious reasons in such cases, but in others in which this occurs the reaction of degeneration is present. The last-named change, together with paresthesia, indicates nervous involvement.

The skin becomes hard, thickened, and inelastic, and is frequently bound down to the underlying tissues. The changes in the rash have already been discussed.

Recovery may occur at any stage of the disease, the end result depending upon the amount of residual damage. The most typical course is subacute, with periods of remission, the patient going on to recovery in some cases, but often the disease proves fatal.

Prognosis.

The prognosis depends upon a number of factors. Some 50% of patients die after a varying period. Bad prognostic factors are extreme youth, involvement of the muscles of deglutition or the cardiac musculature, and the rare haemorrhagic manifestations. Recovery can be complete, but is governed by the severity of the fibrotic changes, which alone may render the patient helpless. Remissions are common but recurrence is rare.

Diagnosis.

Apart from the rarity of the disease, the diagnosis is easy in typical cases. The most characteristic finding is the heliotrope rash described above, in whose absence the diagnosis must always be in doubt.

Other causes of oedema and weakness, such as nephritis, myxœdema, deficiency diseases like beriberi, and the tropho-neuroses, must be excluded. In such cases no muscular pains or contractures are present, and no dermatitis—all of which are prominent features in dermatomyositis.

Polyneuritis may be excluded on the general picture of the disease and also on the absence of sensory changes.

as well as on the late appearance of alteration in the tendon reflexes and in the electrical reactions.

Diseases of the muscles (*myasthenia gravis*, muscular dystrophies, *myositis fibrosa*, *myositis ossificans*, ischaemic paralysis *et cetera*) mostly produce little pain or swelling and are confined to the muscles. *Edema* is not a prominent feature.

The skin changes may cause much confusion in the absence of any pronounced muscular changes, especially in the later atypical phases. A careful history and consideration of the appearances of the rash would seem to be of the most value in differentiation.

Trichiniasis is rare in Australia, if not unknown. In addition it is frequently accompanied by fairly marked gastro-intestinal symptoms, eosinophilia is common, and the diaphragm and ocular muscles are often affected. None of these features is present in the disease under discussion. *Biopsy* of the affected muscles will settle the diagnosis.

Treatment.

The treatment is unsatisfactory and consists of such general measures as rest in bed, physiotherapy, and splinting to prevent deformities and preserve function.

Pathology.

In early (acute) cases examination of the skin reveals only some edema and flattening of the papillae, but in more chronic cases the superficial layers exhibit desquamation and the papillae almost completely disappear. Hyperkeratosis is also seen in some cases, the cells of the corium degenerate, and in a minority of cases edema is still present. Similarly, in early cases more or less edema of the subcutaneous tissues is present, with perhaps areas of leucocytic (neutrophilic) infiltration and hemorrhage. Later, the predominant cells are lymphocytes, connective tissue cells appear, and in a few cases hyaline degeneration is seen.

In the muscles also edema and perivascular accumulation of leucocytes are found. In the muscle fibres are seen degenerative changes of a patchy nature, with loss of striæ in some areas. In more chronic cases regeneration may occur, but more commonly granular or waxy degeneration is found, while the muscle nuclei proliferate. Fibrous tissue becomes increased, some fat cells appear, and the predominant leucocytes are of the small round-cell variety. *Hæmorrhage* may also be seen.

Similar degenerative changes occur rarely in the sheaths of peripheral nerves. Some porosis of the bones may be found in the region of the joints, mainly of the wrists and hands. Some fatty infiltration of the viscera and enlargement of the spleen may also be present.

Clinical Record.

The patient was a man, aged about fifty years, who had worked as a pipe-fitter in a refrigeration system. He was first examined on January 19, 1942, when he was complaining chiefly of general weakness, which had been present for one month. He had noticed swelling of the left arm for some three weeks, and soreness of the muscles of both arms for about one month. He had also observed blood in his semen during the past six weeks, and during the last month had lost all sexual desire. He stated that he was unable to produce an erection. On interrogation he was found to have no other genito-urinary symptoms and no symptoms referable to the alimentary, respiratory, cardio-vascular or haemopoietic systems. With reference to the central nervous system, he had felt only some slight occasional giddiness during the past eighteen months. He had not lost weight. Investigation of his past history showed that he had had only traumatic osteomyelitis of the right humerus as a result of a war wound in 1917, and a worm infestation (exact nature unknown) in 1941. His mother had died at the age of sixty-four years, as a result of diabetes mellitus; otherwise there was nothing of interest in his family history. He had lived a healthy, active life, mostly in the country, did not smoke, and indulged in alcohol

only on infrequent occasions. He denied any venereal infection.

On general examination (January 20, 1942) the patient was seen to be a middle-aged man lying comfortably in bed. His expression was anxious, and he had a peculiar heliotrope pigmentation affecting the upper eyelids and to a less extent the nose and the adjacent areas over the cheek bones. In these areas and on the left side of the neck a slight amount of swelling was also present. Similar pigmentation was present upon the dorsum of the hands and the proximal phalanges, while brown pigmentation of the eponychium at the base of each nail was found. On interrogation he stated that this pigmentation was only of recent development. He also had a linear scar at the lower end of the right arm on the anterior aspect, with some limitation of movement of the elbow. The whole of the left arm and forearm was affected by considerable edema, which was rather hard and did not pit readily. The muscles were a little tender. The legs were thin but not wasted.

In the examination of the central nervous system, no impairment of the higher functions and no abnormalities of the cranial nerves were found. No abnormalities of sensation were detected. There was weakness of all muscles, chiefly those of the arms, up to and including the deltoids, and also the left quadriceps muscle. The tendon reflexes were all present, as were the superficial reflexes. The plantar reflex was normal in character, and no sphincteric or trophic changes were found.

No abnormality was found on examination of the cardiovascular system, except for a difference in blood pressure in the two arms; in the left arm the pressure was 125 millimetres of mercury, systolic, and 80 millimetres, diastolic; in the right arm the pressure was 140 millimetres of mercury, systolic, and 90 millimetres, diastolic. In the respiratory system only a few scattered râles were detected. No abnormality was found in the abdomen.

On rectal examination the prostate was found to be moderately enlarged, oval in shape, and of hard consistency, while the lateral sulci could not be palpated. The urine had a specific gravity of 1.025, was acid in reaction, and contained no abnormal constituents.

The diagnosis of dermatomyositis was entertained, but it was felt that in view of the history and physical findings prostatic carcinoma had to be excluded. The patient was prepared for a transurethral biopsy, which was performed on January 29 under low spinal anaesthesia. On microscopic examination of the tissue only simple hyperplasia of the prostate was found. Recovery from the operation was uneventful, and no general change followed.

The possibility of chronic metallic poisoning from the patient's work was also considered, but excluded by urine examination (see below). Cervical rib was excluded radiographically, the only abnormality seen in this region being some early arthritis of the joints of the cervical vertebrae and the shoulders.

By the beginning of March, 1942, the edema of the left arm had somewhat diminished and a muscle biopsy was performed, a small piece being taken from the left forearm (March 6). The pathologist reported as follows on this tissue:

The preparation is a transverse section of voluntary muscle. The muscle fibres vary considerably in their appearance. Some are uniform and homogeneous, and stain a fairly deep red colour. Others show varying degrees of retrograde change. The least affected of these are merely granular, but different stages of degeneration are to be seen up to a stage at which the fibre has practically disappeared, leaving behind a small amount of pink-staining, granular material. The sarcolemmal nuclei are in places rather more numerous than normal, but this is not a striking feature. Near the periphery of the section there is a zone of connective tissue, but there is no generalized fibrosis. Here and there in the connective tissue septa collections of inflammatory cells, chiefly of the lymphocyte class, are present, but the section as a whole is not characterized by the presence of inflammatory cells.

This report confirmed the diagnosis of dermatomyositis.

The patient's general condition at this time had somewhat improved, but he was very depressed mentally. However, the muscles were very painful, both on movement and on pressure. As the oedema of the left arm had decreased the patient was not confined to bed, but he was encouraged to exercise in moderation. On March 20 some oedema of the feet appeared for the first time, and this increased over the next week, although no further change was observed.

The patient had been afebrile throughout the period of observation, although about this time profuse sweating became evident. From now on his condition deteriorated rapidly, and soon after the onset of swelling of the feet his right arm also became swollen, although the oedema of the face diminished to some extent. Further loss of power occurred in the limbs, with increase in the pain on movement. An interesting feature at this time was the extreme weakness of the muscles of the neck, which was of such degree that the patient could not hold up his head and was almost unable to move it. By April 6 he was quite helpless and began to have trouble with deglutition.

On April 8 he suddenly became breathless after the ingestion of some porridge at breakfast. On examination of the patient, evidence of widespread bronchial obstruction—indrawing of the intercostal spaces on inspiration, with inspiratory stridor—was found. Shortly after this there was a sudden sharp rise in the temperature, and some patchy dulness on percussion developed over the bases of the lungs. A skiagram of the chest showed evidence of bronchopneumonia, following almost certainly upon the inspiration of some porridge. Bronchoscopy was considered, but was rejected mainly because of the poor general condition of the patient. Treatment with sulphapyridine was instituted and the patient was tube-fed.

The next day some improvement was noticeable. The dyspnoea became much less pronounced, although the temperature remained high. The signs of obstruction had disappeared, but had been replaced by signs of bronchopneumonia.

During the next two days further improvement occurred, the temperature being subnormal on April 10. However, it began to rise again slowly, and on April 14 there was a sudden onset of massive generalized oedema, with numerous bubbling râles in the chest. Some slight improvement followed, but finally auricular fibrillation began. The patient then gradually sank into coma and died on April 15, some twelve weeks from the time he first came under observation.

Other Investigations.

Several other investigations were made.

1. A blood count on the patient's admission to hospital revealed a slight degree of normocytic anaemia. The leucocytes numbered 8,000 cells per cubic millimetre, 73% being neutrophile cells, 13% lymphocytes, 12% monocytes and 2% eosinophile cells. The sedimentation rate was increased slightly.

2. A blood count on March 10 revealed leucocytosis; the leucocytes numbered 16,000 per cubic millimetre, 88% being neutrophile cells, 5% lymphocytes, 4% monocytes and 3% neutrophile myelocytes.

3. An electrocardiogram on April 1 revealed sinus tachycardia with slurring of the *R* wave in Leads I and III and of the *S* wave in Leads II and IV, suggesting some degree of myocardial disease.

4. The blood urea level was found to be 43 milligrammes per centum.

5. A urea concentration test showed a concentration of 3.35% after two hours.

6. A radiographic examination revealed no evidence of metastases (bony) or of enlarged thoracic glands.

7. Examination of the cerebro-spinal fluid revealed no change in the pressure, and no abnormal constituents.

8. The Wassermann test failed to produce a reaction in either blood or cerebro-spinal fluid.

9. The urine contained no arsenic, and only a minute amount of lead.

10. The blood calcium content was 9.6 milligrammes per centum and the blood chloride content 585 milligrammes per centum (expressed as sodium chloride).

Autopsy Report.

(E.M.D.)

The body was that of a thin man of the stated age. Gross oedema of the ankles and forearms was present. The biceps muscles on both arms were wasted. On the hands appeared patches of alternating pallor and faint pigmentation.

In the upper lobes of both the lungs emphysema was observed; this was present also in the anterior part of the lower lobe on the right side. In the bases of both lungs bronchopneumonia was found. This was more extensive on the left side. Consolidation was present and the bronchi contained pus. A small calcified nodule suggesting a healed tuberculous lesion was found at the apex of the left lung. The left lung weighed 600 grammes and the right lung 550 grammes.

The pericardial cavity contained an increased amount of clear, straw-coloured fluid. No pericarditis was present. The right auricle and ventricle were dilated. The tricuspid valve admitted four fingers. The left auricle and the left ventricle were dilated. The mitral valve admitted three fingers with difficulty. On its cusps were yellowish nodules which were not vegetations and were not hard as are calcified nodules. The aortic valve was competent, but the cusps were distorted by soft nodules similar to those described on the mitral valve. Slight atheroma of the aorta was present. The coronary arteries seemed normal. The heart weighed 370 grammes.

The thyroid gland was normal. The thymus was absent. Enlarged lymph nodes were present in the mediastinum.

There was no free fluid in the peritoneal cavity, but oedema was present in the tissues of the diaphragm.

The spleen appeared normal; it weighed 180 grammes. The liver was firm, but the cut section was normal in appearance. The liver weighed 1,550 grammes. The kidneys showed some congestion, but were otherwise normal. Each kidney weighed 150 grammes. The pancreas was firm. The suprarenals appeared normal.

Examination of the brain and cord revealed less than the usual amount of cerebro-spinal fluid present over the brain. The vessels were congested. In the cut surface of the brain the blood vessels were obvious, but no other abnormality was seen. The cerebellum, pons and medulla appeared normal.

Microscopic Examination.

The muscles taken for examination were from the forearm, the group attached to the hyoid bone, the belly of the omo-hyoid, the diaphragm, the soft palate and the musculature of the posterior pharyngeal wall.

The changes (Figure II) found were essentially the same as those seen at biopsy, but were more pronounced. Oedema separated the bundles of fibres from each other and also the individual fibres within the bundles. The fibres showed varying degrees of degeneration. Some had lost staining power, in many there was a breaking up of the myosin into a coarse granular material; from some fibres the muscle tissue had almost disappeared and from some it was completely absent. Apparent multiplication and pronounced swelling of the sarcolemma nuclei were observed. The fibrous tissue surrounding the blood vessels was oedematous and in some parts showed pronounced round-cell infiltration, but this cellular infiltration was of patchy distribution and was absent from many of the fields examined.

Several pieces of skin were taken from the back of the hand and from the forearm. Examination of these revealed somewhat atrophic squamous epithelium, on the surface of which was a layer of keratin (Figure I). Balloon cells were present and the corium was oedematous. There was no round-cell infiltration in the layers of the skin. The blood supply was not more abundant than usual.

In the heart the muscle bundles were separated by some oedematous fibrous tissue. In the valves early atheromatous changes were apparent.

In the lung bronchopneumonia was present. The alveoli were filled with exudate and other amorphous material, and in this there were many histiocytes, small round cells and polymorphonuclear cells.

ILLUSTRATIONS TO THE ARTICLE BY DR. P. B. ENGLISH.



FIGURE I.



FIGURE II.

ILLUSTRATIONS TO THE ARTICLE BY DR. DAVID ROTHFIELD.

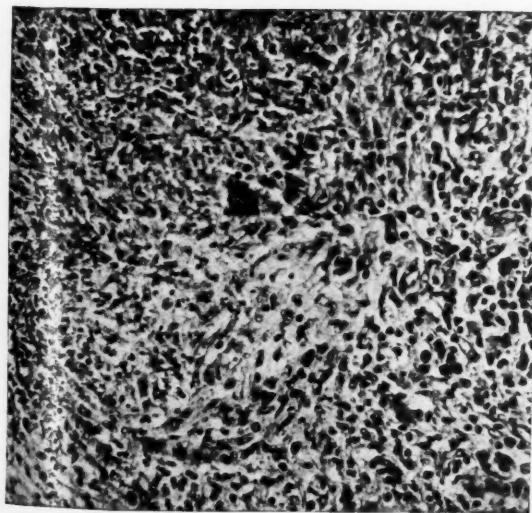


FIGURE IV.—Liver. (x 200.)

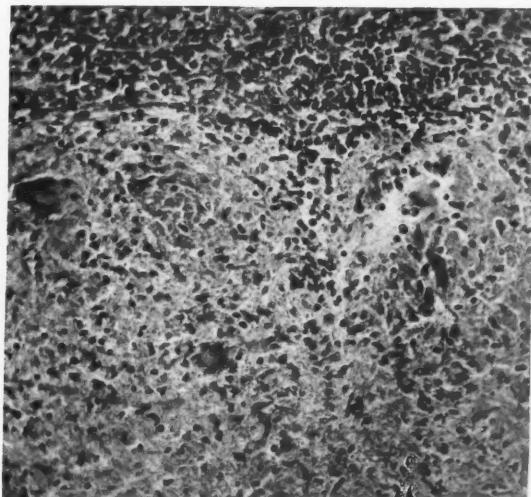


FIGURE V.—Spleen. (x 200.)

ILLUSTRATIONS TO THE ARTICLE BY DR. DAVID L. DEY.

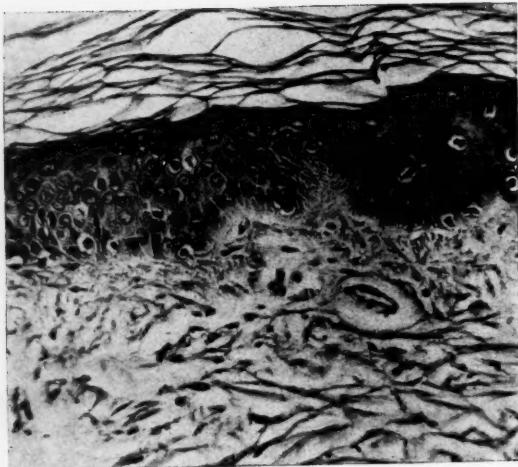


FIGURE I.
Section of skin showing balloon cells in the epithelial layer and oedema in the dermis. (x 240.)

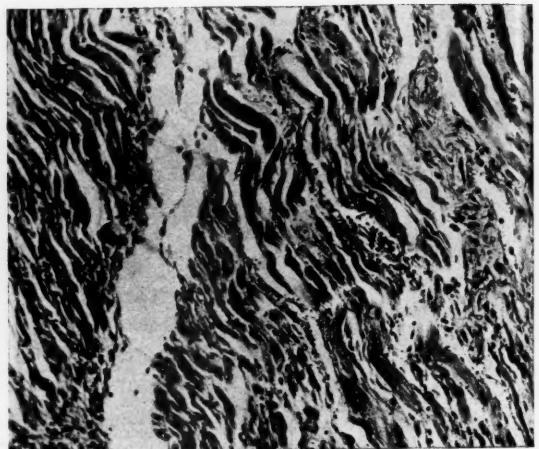


FIGURE II.
Muscle of deglutition, which shows fibres separated by oedema; degenerative changes in muscle fibres, as shown by alteration in affinity for stain; and collections of small round cells in the fibrous tissue between the muscle bundles.

ILLUSTRATIONS TO THE ARTICLE BY DR. JOHN DEVINE.

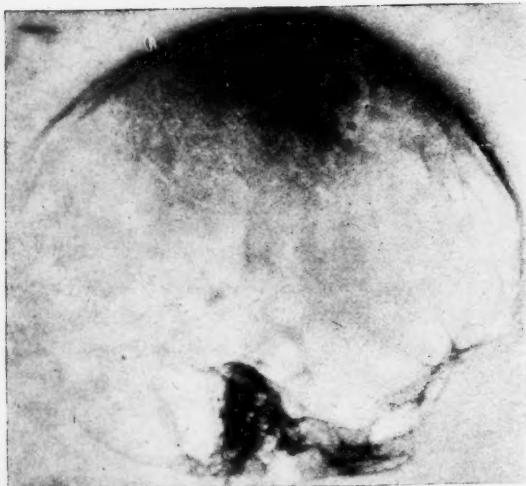


FIGURE II.



FIGURE III.

The nerves appeared normal. No apparent change had occurred in the spinal cord or the cerebral cortex.

The lymph node from the mediastinum was pigmented and congested.

Comment.

To sum up the pathological findings: in the muscle, oedema, degeneration of the muscle fibres and areas of round-cell infiltration of the fibrocellular connective tissue were found; in the skin, atrophy of the squamous epithelium was observed, with slight hyperkeratosis, balloon cells and oedema of the corium. These changes are consistent with a diagnosis of dermatomyositis. The cause of death was inhalation bronchopneumonia.

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FAMILIAL ACHOLURIC JAUNDICE WITH BONE CHANGES: TREATED BY SPLENECTOMY.

By JOHN DEVINE, M.S. (Melbourne), F.R.C.S. (England), F.R.A.C.S., F.A.C.S.
Surgeon to Out-Patients, the Alfred Hospital, Melbourne.

THE following case is put on record so that it may be noted in the literature and be of help to future recorders of this variation of familial acholuric jaundice.

The patient was a man, aged nineteen years, one of a family of which ten members in three generations have had familial acholuric jaundice. It had been noted that he had had haemolytic crises since the age of five years, and ten years earlier his sister had had her spleen removed, but had died twenty-six hours after operation, no definite cause of death being found at the post-mortem examination. The present patient had mongoloid facies, a muddy yellow complexion, a high-domed skull, and slight exophthalmos. X-ray examination revealed great widening of the space between the inner and outer tables of the skull. He was having haemolytic crises every three to five weeks, and between haemolytic crises his spleen, which weighed 45 ounces, was successfully removed.

Cooley (1928) seems to have been one of the first to describe mongoloid facies and skull changes associated with anaemia. Membrane bone changes have been described in sickle-cell and erythroblastic types of anaemia as well as in acholuric jaundice. Wade and Steigrod (1928) described a case very similar to the one reported here, the patient being a member of a Sydney family not related to the Melbourne family, and the late Dr. Eric Cooper (1941) described the case of the sister of the present patient. These appear to be the only two references to bone changes in acholuric jaundice in recent Australian literature.

Dr. Cooper gives an explanation of the separation of the inner and outer tables of the skull in the following argument. Acholuric jaundice commences early in life. The outer table of the skull is not definite, as a rule, until about the sixth year of life on an average. Extramedullary haematopoiesis in acholuric jaundice has frequently been described. This extramedullary haemopoiesis, occurring in the bones of the skull, would tend to separate the tables before their definite formation and result in the wide space between the inner and outer tables (which was found in the present case). In the history of this patient we have evidence that at least by the age of five years it was recognized that he was a sufferer from familial acholuric jaundice, and (in a personal communication) Dr. G. Weigall describes how, at the age of six weeks, a member of a family of patients with acholuric jaundice had a palpable spleen.

Clinical Record.

The patient, a male, aged nineteen years, stated that ever since he was a child he had been having attacks of jaundice recurring every five or six weeks. He also complained that the jaundice never went away completely and that he was always tired and had no inclination to work. Tiredness prevented him from playing sport. Ever since he was a child he had known that he had familial acholuric jaundice. At times he noticed a lump in his abdomen which seemed to "turn on edge", and this had been the subject of complaint by his fiancée. His mother, three sisters, and one brother had familial acholuric jaundice. Two sisters had died, one as a result of splenectomy. He had another brother who did not suffer from familial acholuric jaundice.

On the patient's admission to hospital for operation the positive findings were the presence of jaundice and a spleen palpable about a hand's breadth below the left costal margin (it varied in size from week to week, at times



FIGURE I.

being enlarged down into the left iliac fossa). X-ray examination revealed bone thickening in the frontal and parietal areas, mainly affecting the diploe, with a ground-glass appearance rather than the radiating bone spiculae which were found in the film of the patient's sister (Figure IV).

Dr. Love reported the generalized deformity of "tower skull", with alteration of the basal angle, accentuated convolutional markings and obliteration of the sutures.

A full blood examination by Dr. Harkness gave the following information. The haemoglobin value was 12.5 grammes per 100 millilitres, the erythrocytes numbered 4,200,000 per cubic millimetre, and the leucocytes numbered 13,100 per cubic millimetre. The platelets numbered 280,000 per cubic millimetre. The erythrocyte fragility test showed that haemolysis commenced at 0.72% sodium chloride solution and was complete at 0.45% sodium chloride solution. A differential leucocyte count showed that 58.5% were neutrophile cells, 0.5% were eosinophile cells, 1.5% were basophile cells, 36% were lymphocytes, and 3.5% were monocytes. Of the erythrocytes, 16% were reticulocytes. The haematocrit reading was 44%, the mean

corpuscular diameter was 6.2μ , the mean corpuscular volume was 104 cubic μ , the mean corpuscular haemoglobin content was 30 microgrammes and the mean corpuscular haemoglobin concentration was 29%. Examination of the red blood cells revealed pronounced anisocytosis, but little poikilocytosis. Microcytes were fairly numerous, but the cells appeared evenly stained throughout and no central pallor was present. Polychromatic-staining cells were fairly numerous. Some of the neutrophile polymorphonuclear leucocytes had multisegmental nuclei, otherwise the leucocytes appeared normal.

The appearance of the erythrocytes in the film and the low mean corpuscular diameter but slightly increased mean corpuscular volume indicated spherocytosis.

Schlesinger's test for urobilin and urobilinogen produced a positive result.

On November 8, 1946, under intratracheal anaesthesia with ether (induced by Dr. Wedlich), splenectomy was performed through a left Kocher incision. A good view of the spleen was obtained, as it was possible to divide diaphragmatic and posterior abdominal wall adhesions under direct vision. The pedicle was triply ligated with thick catgut, and the peritoneum and muscle layers were closed without drainage and with catgut.

For two days the patient was well; but then he developed pneumonia and was given penicillin. After this he seemed to have a haemolytic crisis and to be drowsy and depressed, but otherwise well. During this stage of depression glucose and saline solution were given intravenously, but the administration was discontinued after about thirty-six hours. From then on his convalescence was uneventful. Healing took place with a linear scar.

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Reviews.

A YEAR BOOK ON DISEASES OF THE EYE, EAR, NOSE AND THROAT.

THE inclusion of discussion of diseases of the eye and of the ear, nose and throat in a single treatise may be criticized by those who feel strongly about keeping these subjects separate. It seems justified, however, in "The 1946 Year Book of the Eye, Ear, Nose and Throat", the total material presented forming a handy-sized volume of interest to a wide field of medical readers as well as to the specialists. The two specialities are, in fact, treated separately and by different editors. Part I, "The Eye", edited by Louis Bothman, consists of an article by the editor on the medical treatment of glaucoma and a systematic survey of the recent literature with occasional brief editorial comments. Bothman's earnest contention for the avoidance of surgical interference in chronic glaucoma, as far as possible, even in the presence of marked central field changes, is illustrated with detailed case histories of fifteen patients, but is unlikely to convert the convinced supporter of early operation. He considers carbacholine a most satisfactory drug in the treatment of glaucoma. The literature reviewed is grouped first of all anatomically, and then in sections on glaucoma, neurology, refraction and muscles, injuries, surgery, and general and miscellaneous. Among the wide selection of papers considered may be mentioned those on treatment of thrombosis of the central vein of the retina with heparin and with dicumarol, on congenital abnormalities following maternal rubella (reference is made to the series reported by Gregg in 1941), on lid repair and reconstruction, and on the use of diathermy in the treatment of glaucoma.

¹ "The 1946 Year Book of the Eye, Ear, Nose and Throat", by L. Bothman, M.D., the Ear, Nose and Throat, by S. J. Crowe, M.D., with the collaboration of E. M. Hagens, M.D.; 1946. Chicago: The Year Book Publishers, Incorporated. 7" x 4", pp. 544, with illustrations. Price: \$3.75.

Part II, "The Ear", and Part III, "The Nose and Throat", are edited by Samuel J. Crowe in collaboration with Elmer W. Hagens. In a short introduction Crowe stresses the importance of preventive treatment and draws attention to the treatment of causes rather than of symptoms. In this regard he discusses asthma allegedly due to naso-pharyngeal disease. He includes a preliminary discussion on the value of removing hyperplastic lymphoid tissue from the naso-pharynx by irradiation with radium or radon, and promises a detailed report on this at a later date. The literature on the ear is grouped into war injuries (especially gun blast), deafness, ear tests and the labyrinth, the middle ear (including several articles on the fenestration operation), and a miscellaneous section mainly concerned with aural aspects of disease occurring elsewhere in the body. A report by N. E. Murray and G. Reid, of the University of Sydney, on the aural effects of gun blast is noticed.

The literature on the nose and throat is reviewed in sections on the sinuses and allergic conditions (the use of "Benadryl" is discussed here) and miscellaneous nasal conditions. Details are given of the correction of saddle nose by cancellous bone transplants and of the management of fractures of the nasal bony vault; an intranasal tear sac operation is described and some recent advances in the control of infectious diseases are discussed. Sections on the mouth, pharynx and naso-pharynx, and the larynx, bronchi and oesophagus are included.

This book will interest not only the appropriate specialists, but also the general practitioner, the physician (especially the neurologist) and the plastic surgeon. It is attractively produced and contains an index to authors of papers reviewed, as well as a detailed index to the contents.

DISEASES OF THE SKIN.

THE appearance of a third edition of "Diseases of the Skin" by Dr. George Clinton Andrews indicates the appreciation which this textbook has been accorded.¹ The book contains all the newer entities and syndromes that have been described in recent years, as well as the newer treatments. There is a more detailed consideration given to radiation therapy in this edition. One may question the author's recommendation of sulphonamides for the treatment of rather many diseases without cautioning the users of the risk of sensitization. The author shows considerable enthusiasm for treating many conditions with penicillin, and the use of penicillin for some of these, notably acne, is open to criticism. In discussing *sycoisis barbae*, he gives instructions about the making of penicillin ointment, but does not stress the care which the patient should exercise in handling it, for example, removing it from the container with a sterile spatula. The printing, paper and binding are excellent, as are the numerous black and white illustrations, of which a large number have been added to those included in previous editions. However, the caption under Figure 9b on page 35 refers to more than is shown in the actual illustration. The book gives accurately the present knowledge of dermatology, and should prove useful to both the general practitioner and the practising dermatologist.

ALLERGY IN PRACTICE.

THE same high standard is maintained by Feinberg in the second edition of his book "Allergy in Practice" as he achieved in the first.² The subject is dealt with from all angles and details of treatment are well set out.

The position with regard to moulds has been clarified and the main types which produce symptoms have been noted. This section has been greatly enlarged and the methods of diagnosis and treatment of mould allergy are fully discussed.

Newer drugs of the histamine antagonist group, such as "Benadryl", are described and their value is assessed.

It is not possible to find any aspect of allergy which has not been adequately discussed. The pollen sections are, of course, much more helpful for American conditions than those in Australia, as the types vary according to locality.

A study of this book would well repay any practitioner.

¹ "Diseases of the Skin: For Practitioners and Students", by George Clinton Andrews, A.B., M.D.; Third Edition; 1946. Philadelphia and London: W. B. Saunders Company; Melbourne: W. Ramsay (Surgical) Proprietary Limited. 9" x 6". page 944, with many illustrations. Price: 75s.

² "Allergy in Practice", by Samuel M. Feinberg, M.D., with the collaboration of Oren C. Durham and Carl A. Dragstedt, Ph.D., M.D.; Second Edition; 1946. Chicago: The Year Book Publishers, Incorporated. 9" x 6", pp. 860, with illustrations.

The Medical Journal of Australia

SATURDAY, MAY 3, 1947.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

FREEDOM AND THE SPIRIT OF MAN.

In his president's address published in this issue Dr. H. R. R. Grieve by his reference to spiritual freedom has opened up an enormous subject. In the councils of the British Medical Association in Australia Dr. Grieve is recognized as one of those who have insisted that those who practise medicine should be free to follow the dictates of their conscience in what they do for their patients and how they do it. By his plea for spiritual freedom and by his appeal for courage he has put the whole subject on the highest possible plane. With this no one will or should quarrel. But we must realize that the subject of the human spirit and its freedom is as difficult as it is extensive and that it has been debated by many of the world's keenest thinkers. To attempt anything like a review of the subject in this place is of course impossible, but it may be of interest and possibly of use to refer shortly to some considerations of fundamental importance in connexion with it.

That man is capable of enjoying spiritual freedom implies that he has a spiritual side to his nature. Leaving on one side the view that man is a natural being with a soul and a body and that he becomes a spiritual being only by grace, we must realize that spirit is not reality and being in the sense in which Nature is recognized as both real and existent. Nicolas Berdyaev, in his "Freedom and the Spirit", points out that the first and most elementary point which must be established if there is to be any understanding of spirit, is the distinction of principle between "spirit" and "soul".

Soul belongs to nature and its reality is of the natural order, for it is not less natural than body. Yet soul is not the same entity as body or matter. On the other hand, however, spirit cannot be opposed to body or to matter, as though it were a reality of the same order as that of body and of the material world. It is from within, from the depths, that spirit absorbs into itself body, matter, and likewise soul, but spirit belongs to another order of reality and to a different scheme of things.

Spirit is not substance; it is not an objective reality in the same sense as other substances are realities. Spirit is

life and can be known only in concrete experience—in an experience of spiritual life and in the accomplishing of its destiny. Spirit as the knowing subject is at the same time the known object. Spiritual life is not an object of knowledge; it is the knowledge itself of spiritual life. It is therefore clear, as Berdyaev asserts, that spiritual experience is not after all only another name for the emotional life of the soul. The life of the spirit is possible for every man, but if he is to enter on it, he must undergo a kind of spiritual rebirth. It was this which mystified Nicodemus when he asked whether a man could enter a second time into his mother's womb and be born. If a man undergoes a spiritual rebirth he is none the less human—he still has to live his life in a world of material things and material events. Berdyaev's definition of spirit must therefore be amplified. In the religious life of man spirit must take cognizance of the material and achieve what we may call a symbiosis with it. John Macmurray, in his "Reason and Emotion", expresses this well:

Religion is, indeed, spiritual. But the spiritual is not other than the material, but inclusive of it. Spirit is not other than body but more than body. And any effort to establish a spiritual life which is not a material life, is an illusion, and a symptom of the immaturity of our religion. Till we have overcome this dualism of spirit and matter—not by denying either but by integrating the two in an inseparable wholeness—religion will never know itself or begin its development in maturity.

Turning now to freedom itself, we must recognize that the word is often used loosely without a context. Man enjoys freedom from something or freedom to do something—freedom from want and from fear, freedom of speech and of worship, to name the "four freedoms". Another way of expressing this is by saying that man is given freedom or achieves it that he may do something with it. To do nothing with freedom is to revert to slavery—the slavery of self. In his chapter on freedom of the spirit Berdyaev quotes a classical definition of freedom which "remains indisputably true in spite of its inability to give us a positive clue to its mystery". According to this definition "freedom is self-determination in the inmost depths of being and is opposed to every kind of external determination which constitutes a compulsion in itself". Hegel held that "freedom is to be in possession of oneself". Although Berdyaev in his metaphysical discussion compels us to the conclusion that freedom of the spirit is something completely unfathomable, he describes two kinds of freedom which throw a good deal of light on the subject from the practical point of view. In the first of its meanings freedom is that "initial and irrational liberty which is prior to good and evil and determines their choice"; the second kind is "that intelligent freedom which is our final liberty in truth and goodness". This means that freedom is either a starting point and a means to an end, or else it is an aim and object. In regard to the second kind of freedom Berdyaev writes:

Socrates and the Greeks generally recognized only the existence of the second kind of freedom, which comes to us through reason, truth, and goodness. In the words of the Gospel, "Ye shall know the truth, and the truth shall make you free"; it is the same kind of freedom which is referred to, that is to say, freedom in the truth and by the truth. When we say of a man that he has attained a true liberty by having overcome the lower part of his nature and having submitted it to the control of the highest spiritual principles, that is, to truth and goodness, it is always this second kind of freedom that we refer to. Similarly when we say of an individual or a whole people that they must free themselves from spiritual slavery and

attain a true liberty, it is again the same sort of freedom that we have in mind. It is the freedom to which man is making his way, the very summit of his life's activity and its final goal; it is the freedom which must one day be achieved through the triumph of the highest principles of life.

Of the other kind of freedom Berdyaev states that it is the kind from which man starts and by which he makes choice of his direction in life and through which he acquires truth and goodness. He points out that this first kind of liberty does not necessarily mean an adherence to the life in truth. It may mean the choice of the path of discord and hatred, of the affirmation of one part as against another, the way of disunion in the spiritual world, that is to say, the way of evil. In this case "initial freedom has not been sanctified in love, it has not been illuminated by the inner light of truth". This choice is continually available to man; he may have made progress in the way of light and truth and yet depart from it. In this regard Henri Bergson, in his "Creative Evolution", points out that the doctrine of teleology (the doctrine of final causes) implies that things and beings merely realize a programme previously arranged. This he terms radical finalism and he will have none of it. If there is in the universe nothing unforeseen, no invention and no creation, time is useless. Bergson describes radical mechanism as implying a metaphysic in which the totality of the real is postulated completely in eternity, and in which the apparent duration of things expresses merely the infirmity of a mind that cannot know everything at once. He explains that, as in the mechanistic hypothesis, it is supposed in radical finalism that "all is given". Finalism thus understood is only inverted mechanism. It holds the same postulate with the difference that "in the movement of our finite intellects along successive things, whose successiveness is reduced to a mere appearance, it holds in front of us the light with which it claims to guide us, instead of putting it behind". This means that we are attracted by something *ad frontem* instead of being impelled by a force *a tergo*. A man who has achieved a degree of spiritual freedom based on truth and described in terms of our discussion as belonging to the second kind of freedom (that which was mentioned first) is well aware that no radical finalism will keep him in his state of freedom, and the further he advances probably the more conscious will he be of this. Francis Thompson, the mystic, knew this. In "The Dread of Height" he wrote that "low they fall whose fall is from the sky". And he sighed "for a heart less native to high Heaven" or "for a will accipitrine to pursue".

We come finally to the object of a life of spiritual freedom. To attain such a state does not by any means imply a life of easy comfort or tranquillity. Rather the reverse. The man who is spiritually free will be in the midst of others who are not, and possibly may have to live with some who imagine that they are. He cannot isolate himself and live unto himself, ministering to his own spiritual and bodily needs. Not seldom such a man is made to suffer because he is different from other people. The pages of history could give many names of men and women who have been called upon to do this. We all know that

Stone walls do not a prison make,
Nor iron bars a cage;
Minds innocent and quiet take
That for an hermitage;

If I have freedom in my love,
And in my soul am free,
Angels alone, that soar above,
Enjoy such liberty.

During the last war men and women suffered ignominy, torture and death rather than betray the cause for which they were fighting and rather than expose some other person to suffering. No one will deny that the spirits of these men and women were free. Had they given way and saved themselves from pain and death they would have cast aside their spiritual freedom. And this brings us to our final considerations. At the outset we recognized that the problem of spiritual freedom was one of great magnitude and that we could not hope to grasp its full significance. We can, however, set up a working standard for the right use of our spiritual freedom. The man of religion if asked what he would prefer to do when he was spiritually free would probably say that he wished to make his will conform to the divine will. But he has to discover what that divine will is. He will not go far astray if he determines that he will not use his freedom if in the exercise of it he does anything likely to jeopardize the freedom of another. No reader will have difficulty in calling to mind zealots for various causes who have been wholehearted in their devotion but who have in their zeal brought misery and suffering to others who had different convictions. As already explained, freedom should be used and the standard suggested is as worthy of acceptance by medical practitioners as it is by any other group of persons. With this standard freedom will express itself in service, and there is only one type of service which has without question been described as synonymous with "perfect freedom".

Current Comment.

INCIDENCE OF ACUTE CORONARY OCCLUSION.

HEART DISEASE has been, since 1912, the chief cause of death in the United States of America; coronary artery disease alone is the greatest single cause of death except cancer. The incidence of acute coronary artery occlusion in the United States has been analysed by Arthur M. Master,¹ who discusses the factors responsible for its increase. Satisfactory information was not available from the United States Census reports or from other official records as the official terminology does not separate acute coronary artery occlusion or thrombosis as a specific disease; so an estimation was made by sampling death certificates of the State of New York, and by applying these to the whole country. By this means it was estimated that during 1942 there were approximately 120,000 deaths from acute coronary artery occlusion in the United States. Assuming a mortality rate of 15%, which Master considers a reliable figure, he estimates the incidence of attacks as 800,000 each year. Using the United States Census figures for the number of men and women over forty years of age, and an incidence ratio of three men to one woman, he concludes that, within this upper age group, one man in forty and one woman in one hundred and fifteen have an attack of acute coronary occlusion each year. These estimations are considered to be conservative. That the incidence has increased seems unquestionable, but it is difficult to assess the degree of increase, as prior to 1930 the disease was not generally recognized, and even since that year its recognition and the use of a standard term in its recording have only come about gradually. The other main factors in the increase in the incidence of coronary artery disease are

¹ American Heart Journal, February, 1947.

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the lengthened span of life, the aging of the population, and improved diagnosis and treatment. According to Metropolitan Life Insurance figures quoted, the life span has increased from 34 years in 1889 to 57-36 years in 1930 and to 64-40 years in 1944; this increase is due, in the main, to a reduction in the amount of infectious disease, advances in medical knowledge, especially recent therapeutic discoveries, and improvement in public health and sanitation. The growth in size of the older age groups in the population is due not only to the increased life span, but to such factors as the decline in birth rate. With the rapid advance in methods of prevention and treatment of disease, an even greater life span seems likely with consequent greater incidence of coronary artery disease; this throws more stress on the importance of investigating the aetiology, about which there is little clear knowledge. Master discounts a number of the prevailing ideas; his observations and statistical investigations do not support the aetiological importance of stress and strain in modern life, of tobacco and alcohol, or of overweight; there appears to be no significant relationship to occupation, even among medical practitioners. There seems no reason to question that this analysis of the incidence of coronary artery disease in the United States can be applied generally to countries, such as our own, whose way of life is similar. The implication is also of general application that more research is needed into the causes of this condition if the growing life span is to mean a true increase in useful active life free from the crippling limitations of inadequate cardiac function.

DIPHTHERIA IN EUROPE AND NORTH AMERICA.

It has been generally stated that a decline in the incidence of diphtheria has followed the widespread adoption of immunization in many communities. Speculation has, however, quite legitimately continued as to whether immunization and the decline in incidence are coincidental or truly related facts. Interesting light is thrown on the question in a discussion by Gaylord W. Anderson¹ of the incidence of diphtheria in Europe and North America during the recent war. He mentions three ominous factors present in Europe immediately prior to the outbreak of war: a strain of the diphtheria bacillus of greater malignancy than any in the United States, a very limited degree of artificial immunization, a high incidence of diphtheria in certain parts of central Europe, notably Germany, Austria and England, with a very low incidence in Norway, Sweden and the Netherlands. In 1941 the incidence of diphtheria began to rise in parts of north-western Europe, reaching a tremendous peak in 1943-1944, which, in the case of Norway and the Netherlands, at least, fully justifies Anderson's use of the term "the wartime explosion of diphtheria". In Norway, for example, the incidence rose from 149 cases in 1940 to 22,787 in 1943. This he attributes to the breakdown of public control methods and lowered resistance due to physical hardships, both resulting from the German occupation and occurring in a population which had not been immunized; the previous low incidence had been maintained by other means than immunization. The increase in Denmark and Sweden was much less; a fact possibly attributable to better living conditions in neutral Sweden and a more widely immunized population in Denmark. An interesting contrast is found in the British Isles. England and Wales, faced with the danger of epidemics, initiated a vigorous campaign for immunization against diphtheria, and, despite problems of crowded air-raid shelters, displacement of population and hardship, registered a steady decline in the incidence of diphtheria from 51,091 cases in 1941 to 29,446 in 1944. In neutral Eire, on the other hand, no special precautions were taken, and the number of cases rose steadily over the same period (1,447 in 1941, 5,168 in 1944). It is difficult to escape the obvious inference as to the value of immunization. In the United States and Canada, where a large proportion of the population submits

to immunization, the incidence of diphtheria had been steadily falling for many years prior to the war, a phenomenon which appeared to be parallel with the wider adoption of immunization. During 1944, 1945 and the early part of 1946 a rise occurred, though the trend was again downward in the latter part of 1946. It has been suggested that this may have been due to the introduction of a new, more virulent strain from Europe by returning servicemen. Anderson states that no evidence of the existence of any such strain has been found, and draws attention to the periodic nature of diphtheria epidemics, a well-marked feature of pre-immunization days which had possibly been masked by "the precipitous decline of the disease" following acceptance of immunization. He feels that the rise in the total incidence is explained sufficiently by the normal fluctuation of the disease in the non-immune population. Much of the interest of Anderson's paper is in the statistics presented, various interpretations being, of course (as he accepts), possible. However, he seems quite justified in drawing from them confirmation of the practical benefit to a community of immunization and also of the potential danger to a non-immunized community protected by other methods.

A NEW SYNTHETIC CURARIZING AGENT IN ANÆSTHESIA.

For some time now attention has been paid to curare as an adjunct to general anaesthesia with encouraging results. A preliminary note on its use by H. J. Daly and S. V. Marshall appeared in this journal on July 6, 1946. Early reports have now been published on a new synthetic drug, "Myanesin" or "B.D.H. 312". This preparation has an action comparable with that of curare, but apparently has some advantages over it. F. M. Berger and W. Bradley² have described its properties and mode of action as seen in laboratory experiments. "Myanesin", belonging to the class of α -glycerin ethers, is α : β -dihydroxy- γ -(2-methylphenoxy)-propane. It is injected intravenously, and, in suitable doses, produces muscular relaxation and paralysis without causing respiratory arrest or influencing blood pressure. It has a low toxicity and is quickly destroyed in the body. Toxic doses cause death by respiratory paralysis, but there appears to be a wide margin between effective and toxic dosage. "Myanesin" efficiently antagonizes strychnine convulsions, counteracts excitement due to barbiturates, and, given in an ineffective dose combined with an ineffective dose of barbiturates, produces deep narcosis without excitement in the pre-narcotic stage and with complete muscular relaxation. Its action is apparently due to depression of reflexes in the spinal cord, so differing completely from that of curare. For this reason it is not considered to be a curare substitute. F. Barnett Mallinson has employed "Myanesin" with anaesthesia in human patients; in a discussion³ illustrated by twelve case histories he is cautiously optimistic. He seems satisfied that the drug has a wider margin of safety than curare. The usual doses given were 5.0 to 20.0 millilitres (about 7.0 to 28.0 milligrammes per kilogram), but as much as 50.0 millilitres has been given during a long operation with no apparent ill-effect. Abdominal relaxation without any distress was obtained, even in the conscious patient; intercostal paralysis did not follow doses producing full abdominal relaxation. In most cases it appeared to be more effective with barbiturate anaesthesia than is curare; apparently it enhances the action of barbiturates. Abdominal relaxation was easily obtained under "Pentothal"-nitrous oxide and oxygen anaesthesia when "Myanesin" was used. It proved effective under the lightest possible anaesthesia. Bronchospasm or salivation did not occur even when no atropine or hyoscine had been given. These are only preliminary reports and the authors are wisely conservative in their conclusions. Nevertheless the results so far indicate that "Myanesin" may well effect an important advance in anaesthesia.

¹ American Journal of Public Health and the Nation's Health, January, 1947.

² The Lancet, January 18, 1947.

³ Ibidem.

Abstracts from Medical Literature.

PHYSIOLOGY.

Accuracy of Indirect Determinations of Blood Pressure in the Rat.

S. S. SOBIN (*The American Journal of Physiology*, May, 1946) describes some experiments concerning the accuracy of indirect determination of blood pressure in the rat by both plethysmograph and cuff methods. He states that the accuracy and dependability of the indirect plethysmographic method of measuring systolic blood pressure can be greatly increased by omitting warming of the body and by substituting local warming of the plethysmograph and tail to temperatures between 42° and 44° C. Indirectly determined systolic pressures by means of a ten-millimetre occluding cuff under these conditions agree very well with directly determined systolic pressures measured simultaneously by the Hamilton manometer from the femoral artery. A significant gradient of mean pressure in the caudal artery has been demonstrated by a micro-injection method. For this reason a ten-millimetre occluding cuff applied as closely as possible to the base of the warmed tail of the rat is more accurate than a forty-millimetre cuff similarly applied.

The Tolerance of Man to Cold as Affected by Dietary Modification.

H. H. MITCHELL, N. GLICKMANN, E. H. LAMBERT, R. W. KEETON AND M. K. FAHNESTOCK (*The American Journal of Physiology*, April, 1946) report that ten male subjects were used to compare the tolerance of man to cold when subsisting on a diet with a high carbohydrate content or with a high fat content. The diet rich in fat induced a mild degree of ketonuria, but no evidence of hemolysis was noted in blood samples taken under basal conditions. For the maintenance of body weight the five subjects on the diet with a high carbohydrate content required an average of 188% of food Calories expressed as a percentage of their basal expenditures. Those on the diet with a high fat content required 200%. The two diet groups were not statistically different in this respect. However, all four of the men on the diet rich in fat required more food energy than they needed in the immediately preceding experiment while consuming a diet rich in carbohydrate. The cooling of the internal tissues of the body on exposure to intense cold is greater on a diet rich in carbohydrate than on a diet rich in fat, but only when the interval between meals is reduced to two hours. With regard to the cooling of the skin, no superiority of a meal with a high fat content over a meal with a high carbohydrate content was demonstrated in a subsequent four-hour exposure to cold. It is highly probable that a diet rich in fat is superior to a diet rich in carbohydrate in maintaining general psychomotor performance and visual efficiency as measured by fusion frequency of flicker. With reference to the speed of tapping, the superiority of fat over carbohydrate food seems clear cut. Decreasing the interval between meals during cold exposure has no favourable effect on rectal temperature changes if

the meals are largely carbohydrate in character, but it does have a favourable effect if the meals are largely fat in character. In a period of eight hours, the decrement in rectal temperatures may be decreased by 0.6° C. if the interval between meals rich in fat is decreased from four to two hours. Decreasing the interval between meals during cold exposure progressively and markedly increases their favourable effect on the maintenance of psychomotor functioning, but obliterates entirely the differential effects produced by diets differing widely in their proportions of carbohydrate and of fat. The superiority of meals with a high fat content over meals with a high carbohydrate content in maintaining tissue temperature in a cold environment seems to be related to heat emission rather than to heat production and may involve a temporary deposition of dietary fat in the subdermal tissues following a meal rich in fat. The evidence secured in this and the preceding investigation justifies the general conclusion that dietary modifications may exert considerable and favourable effects upon the ability of man to withstand exposure to intense cold. Foods rich in carbohydrate and, especially, fat are to be preferred to foods rich in protein. Small meals spaced at short intervals of time (two hours) are more favourable in this respect than large meals spaced at the usual four to six hour intervals. Some idea of the benefit that may ensue from the institution of such a dietary régime may be obtained by comparing the results in changing from the least favourable method of feeding tested, namely, the diet rich in protein with one meal (20%) served during the eight-hour exposure, to the most favourable method, the diet rich in fat with three 20% meals served during eight hours of exposure. By such a change, the decrement in rectal temperature induced by cold can be reduced by two-thirds and the decrement in general psychomotor functioning by one-half.

Changes in Arterial and Venous Blood Pressure and Flow Distal to a Cuff Inflated on the Human Arm.

R. W. WILKINS AND S. E. BRADLEY (*The American Journal of Physiology*, October, 1946) state that they have extended their previous work on blood flow in the arm in the presence of inflated cuffs on the arm, and by introducing needles in the antecubital space into artery and vein have measured the pressures existing under various conditions of the cuff in eleven subjects. They state that, when inflated at pressures less than diastolic, the cuff caused no change in distal arterial pressure, but produced a prompt, steady rise in venous pressure to about the same level as that in the cuff. When inflated at pressures greater than diastolic, the cuff caused either no change, an increase, or a decrease in arterial pressure distally, depending upon the pressure in the cuff and the resting blood flow in the part. Thus, the higher the cuff pressure (within limits) and the lower the flow, the greater the enhancement of diastolic and mean arterial pressure distally. When pressure in the cuff was too high it caused a decrease in systolic and mean pressure. Venous pressure rose when the upper cuff was inflated at supradiastolic pressures in the same way as at infradiastolic pressures, except that the rate of rise varied

directly with the resultant distal mean arterial pressure. Likewise, the rate of rise of plethysmographic blood flow measurements could be increased by applying the proper pressure in the upper cuff. These findings indicate that increases in distal arterial pressure produced by inflating the cuff at certain supradiastolic pressures are due to a reduction of regurgitant arterial flow and are associated with increases in forward blood flow distally. Such increases are maintained only briefly until venous pressure and resistance rise high enough to impede the flow. When the cuff was inflated at suprasystolic pressures, distal arterial pressure fell in a smooth curve to, or slightly below, venous pressure, which rose. The theoretical mechanisms and possible practical applications of these phenomena are discussed.

The Cardio-Vascular Responses to the Breathing of Oxygen.

W. V. WHITBORN, A. EDELMANN AND F. A. HITCHCOCK (*The American Journal of Physiology*, April, 1946) report that when the cardiac outputs of normal male subjects were determined from ballisto-cardiograms, the cardiac minute volumes were consistently lower during inhalation of 100% oxygen (Linde, United States Pharmacopoeia) as compared with determinations on the same subjects breathing air. Reductions in both heart rate and stroke volume contributed to this effect. Systolic blood pressure did not change, but diastolic pressure showed a slight but significant rise. The maintenance of the blood pressure level in spite of reduced cardiac output is interpreted as evidence of an increase in the general peripheral vascular resistance. It is suggested that the cardio-vascular effects of oxygen inhalation be kept in mind in conditions of hyperoxygenation of the blood, such as denitrogenation, and that they may play a part in the physiological responses to changes in barometric pressure.

BIOCHEMISTRY.

Erythrocytes.

D. SHEMIN AND D. RITTENBERG (*The Journal of Biological Chemistry*, December, 1946) have made a study of the isotope concentrations found in the hem of the human red blood cell, after the feeding of glycine made labile with N^{15} . It indicates that the erythrocyte is not subjected to indiscriminate destruction, but has a life span. This was found to be about one hundred and twenty-seven days. Evidence was also obtained which showed that the protoporphyrin of hemoglobin is not reutilized for haemoglobin synthesis. Glycine is the nitrogenous precursor of the protoporphyrin of hemoglobin in man.

Sulphonamides.

K. I. ALTMAN (*The Journal of Biological Chemistry*, November, 1946) has investigated the effect of various sulphonamide drugs on isolated respiratory enzymes and coenzymes. The activity of *Zwischenferment* is greatly inhibited by sulphonamides. The effect of these drugs on cytochrome c, cytochrome c reductase and lactic dehydrogenase is much smaller, whereas triphosphopyridine nucleotide and cytochrome oxidase are not affected at

all. The sulphonamides react irreversibly with the *Zwischenferment* and compete with the prosthetic group for the protein moiety of the enzyme. The enzyme protein combines more readily with its prosthetic group than with the sulphonamide: triphosphopyridine will counteract sulphonamide in concentrations which are fifty times higher. Antagonism between drug and substrate likewise has been demonstrated, since inhibition due to sulphonamides can be prevented by addition of glucose-6-phosphate.

The *d*-Amino Acids.

A. A. ALBANESE *et alii* (*The Journal of Biological Chemistry*, December, 1946) have shown that, within seven hours after the oral administration of *d*-tyrosine to adult humans, an excess of urinary tyrosine and aliphatic organic acids is excreted which would seem to account for nearly all of the *d* component fed. These findings are interpreted to indicate that *d*-tyrosine, unlike *l*-tyrosine, is metabolized in man in such a manner as to render it unavailable for normal physiological functions.

Protoporphyrin.

D. SHEMIN AND D. RITTENBERG (*The Journal of Biological Chemistry*, December, 1946) have shown that glycine is a nitrogenous precursor of the protoporphyrin of haemoglobin in the rat. The finding of N^{15} in haem after the feeding of isotopic proline, glutamic acid, leucine and ammonia is due to the N^{15} enrichment, by the nitrogen of these compounds, of the body nitrogen from which the precursor of haem is synthesized, rather than to a direct utilization of these compounds.

Acetyl Choline.

M. A. LIPTON AND E. S. J. BARRON (*The Journal of Biological Chemistry*, November, 1946) have shown that the enzyme system which anaerobically synthesizes acetyl choline is water soluble and can be extracted from acetone-dried preparations of mammalian brain. At least five components are required for full activity of the enzyme system. These are choline, a suitable substrate, potassium, adenosine triphosphate, and a co-enzyme present in boiled aqueous extracts of brewer's yeast or animal tissues. The suitable substrates which have been found are citrate, *cis*-aconitate and aceto-acetate. It is claimed that there are two steps involved: the formation of "active" acetate from the anaerobic breakdown of citrate or aceto-acetate, and the acetylation of choline by the "active" acetate.

Transamination.

P. P. COHEN AND M. HAYANO (*The Journal of Biological Chemistry*, November, 1946) have studied the conversion of citrulline to arginine by transamination with glutamic acid in kidney slices and homogenates. The relative activity of the reaction by these preparations decreased in the following order: liver homogenate, kidney slices, kidney homogenate, liver slices. Homogenized tissue preparations of liver and kidney required the following substrates and co-factors: adenosine triphosphate, citrulline, glutamic acid, cytochrome *c*, magnesium ions and an oxygen atmosphere. Liver in every case required smaller concentrations of the substrates and showed a greater activity than kidney homogenate. Aside

from glutamic acid, glutamine was the only compound showing any appreciable activity in the transamination system. Brain, testes and heart homogenates showed no transamination activity. Glutamic acid appears to be an obligatory intermediate in the introduction of ammonia at the citrulline to arginine step of the urea cycle.

Bone Marrow.

A. A. DIETZ (*The Journal of Biological Chemistry*, October, 1946) has shown that there is a direct linear relationship between the water and residue (lipide-free solids) and an inverse linear correlation between these two components and the lipide content of the marrow. The total nitrogen concentration of the marrow varies directly with the residue and water and inversely with the lipide. With advancing age there is a decrease in the water, residue, total nitrogen and lipide nitrogen and an increase in the lipide concentration of normal bone marrow.

Human Spermatozoa.

J. MACLEOD AND W. H. SUMMERSON (*The Journal of Biological Chemistry*, October, 1946) have shown that human spermatozoa washed free of adhering seminal fluid are capable of hydrolysing adenosine triphosphate to produce adenylic acid. Various other phosphate esters of recognized significance in carbohydrate metabolism are not hydrolysed under the same conditions. The hydrolysis of adenosine triphosphate does not modify the normal production of lactic acid from glucose by the cells. The liberation of phosphorus from adenosine triphosphate is not accompanied by phosphate transfer; nor is any energy yielded by this reaction made available for the maintenance of motility. Human seminal fluid contains an enzyme or enzymes catalysing the splitting of phosphate from all the phosphate esters studied.

Vitamin A.

E. M. SHANTY *et alii* (*The Journal of Biological Chemistry*, May, 1946) have shown that vitamin A_2 can be incorporated into the visual purple of the albino rat, an animal normally utilizing only vitamin A_1 in this retinal pigment. Upon administration of 100 "units" of vitamin A_2 daily, the liver of the albino rat promptly develops and maintains a store of vitamin A_2 . Upon continued feeding of vitamin A_2 , the blood of the albino rat slowly increases in vitamin A_2 content while tenaciously holding to the vitamin A_1 available. Vitamin A_2 appears to replace vitamin A_1 successfully in many important body functions of the rat.

Ascorbic Acid.

O. H. LOWRY *et alii* (*The Journal of Biological Chemistry*, November, 1946) have measured white blood cell and serum ascorbic acid concentrations in subjects who had received standardized diets for eight months containing eight, 23 and 78 milligrams of ascorbic acid per day. With eight and 23 milligrams of the vitamin per day the white cells averaged about 12 milligrams per centum of ascorbic acid compared to 25 milligrams per centum of ascorbic acid for subjects receiving 78 milligrams per day. The serum levels were not zero even with the low intakes and low white cell levels, averaging 0.2 milligramme per centum for those receiving 8 and 23 milligrams of

ascorbic acid per day. After eight months on a diet containing eight milligrams of ascorbic acid per day, an average of about 1,800 milligrams of ascorbic acid was retained following the ingestion of large amounts of ascorbic acid. Since the increase in white cell ascorbic acid concentration paralleled the retention of ascorbic acid, the white cells appear to be a valid index of the total body concentration of ascorbic acid. This leads to the conclusion that the normal adult contains nearly four grammes of ascorbic acid.

Folic Acid.

B. SCHWEIGER *et alii* (*Archives of Biochemistry*, May, 1946) have shown that liver and kidney are the richest sources of folic acid. Veal muscle tissue was somewhat higher than pork or lamb. From 8% to 46% of the folic acid was retained in the meat after cooking and 65% was retained after curing pork hams. Although the significance of folic acid in animal nutrition is not completely known, sufficient information is available to indicate that folic acid and related compounds are active in several different species including man.

Pyridoxine Insufficiency.

W. W. HAWKINS *et alii* (*The Journal of Biological Chemistry*, November, 1946) report that deprivation of pyridoxine in rats fed on a protein-rich diet caused an increase in the fasting blood levels of urea and of non-protein nitrogen. Administration of casein hydrolysate or of alanine to deprived rats caused a marked and sustained increase in blood urea. A dog deprived of pyridoxine developed a microcytic, hypochromic anaemia and showed an increased urinary output of urea, ammonia, uric acid and creatinine. These observations are consistent with the transaminase explanation of pyridoxine action. They suggest signs of pyridoxine insufficiency which might be sought in man.

Streptomycin.

P. R. REGNA *et alii* (*The Journal of Biological Chemistry*, October, 1946) state that the most favourable conditions for the stability of solutions of streptomycin are at temperatures of or below 28° C. and between pH 3.0 and pH 7.0. Inactivation takes place outside of this range. Heat greatly increases the rate of decomposition over the whole pH scale. Relatively dry neutral salts of streptomycin are stable at 50° C. over long periods.

Stilbestrol.

H. ZIMMERBERG (*The Journal of Biological Chemistry*, November, 1946) has reported that stilbestrol disappears when added to rat liver slices in Ringer-bicarbonate solution shaken at 37° C. in 95% carbon dioxide and 5% oxygen. The stilbestrol that disappears is either conjugated or oxidized, the amount of each depending upon the concentration of stilbestrol. Apparently only one of the two hydroxyl groups is attacked. Thermolabile enzyme systems sensitive to cyanide are responsible for the conjugation and oxidation of stilbestrol. The conjugation can take place with sulphuric or another, probably glucuronic, acid, depending upon which is available. Intact cells are necessary for conjugation but not for oxidation.

Bibliography of Scientific and Industrial Reports.¹

THE RESULTS OF WAR-TIME RESEARCH.

During the war a great deal of research was carried out under the auspices of the Allied Governments. It has been decided to release for general use a large proportion of the results of this research, together with information taken from former enemy countries as a form of reparations. With this end in view, the United States Department of Commerce, through its Publication Board, is making a weekly issue of abstracts of reports in the form of a "Bibliography of Scientific and Industrial Reports". This bibliography is now being received in Australia, and relevant extracts are reproduced hereunder.

Copies of the original reports may be obtained in two ways: (a) Microfilm or photostat copies may be purchased from the United States through the Council for Scientific and Industrial Research Information Service. Those desiring to avail themselves of this service should send the Australian equivalent of the net quoted United States price to the Council for Scientific and Industrial Research Information Service, 425, St. Kilda Road, Melbourne, S.C.2, and quote the PB number, author's name, and the subject of the abstract. All other charges will be borne by the Council for Scientific and Industrial Research. (b) The reports referenced with an E number may be obtained in approved cases without cost on application to the Secondary Industries Division of the Ministry of Post-War Reconstruction, Wentworth House, 203, Collins Street, Melbourne, C.1. Copies of these are available for reference in public libraries.

Further information on subjects covered in the reports and kindred subjects may be obtained by approaching the Council for Scientific and Industrial Research Information Service, the Secondary Industries Division of the Ministry of Post-War Reconstruction, or the Munitions Supply Laboratories (Technical Information Section), Maribyrnong, Victoria.

PB 31968. U.S. NAVAL TECHNICAL MISSION TO JAPAN. Dentistry in the Japanese armed forces. (Rept., Index M-02.) November, 1945. 15 pp. Price: Microfilm, \$1.00; Photostat, \$1.00.

The practice of dentistry in the Japanese armed forces seems, for the most part, to have been in the hands of qualified personnel. Entrance requirements to the Dental Corps were adequate and the standards of teaching in the recognized dental colleges are fairly advanced. The Japanese services suffered from a grossly understaffed Dental Corps, more than from the mediocrity of the performance. Instruments and equipment were modern, and, since the Japanese make good technicians, the dental work is probably of a creditable nature. No new techniques or drugs seem to have been employed, although substitute metals were in use for fillings. Acrylic resins were produced in Japan two years ago, and are in dental use. The number of qualified oral surgeons was as insufficient in ratio to the dentists as was the number of dental officers to personnel in the services.

PB 31614. WOODWORTH, W. W., et alii. Pharmacology and malariology in Japan, civilian and naval. (Naval Technical Mission to Japan Report, Index M-12.) January, 1946. 120 pp. Price: Microfilm, \$3.00; Photostat, \$8.00.

This report covers Japanese activities on the following fields: A. Navy pharmacology. (1) Penicillin, (2) sulphadiazine, (3) benzedrine, (4) flash burn protection, (5) pharmacocopeia, (6) water purification, (7) chemotherapy in therapeutics. B. Civilian and army pharmacology. (1) Neocyanine derivatives, (2) drugs for improvement of night vision, (3) civilian drugs. C. Malariology. (1) Life-cycle research, (2) malarial therapy, (3) method of treatment for old malaria, (4) method for treating persons having protozoa, (5) method of treating clinical malaria. D. Parasitology. Enclosures A-D refer to the synthesis and effects of two new drugs called kohai ("rainbow wave") and shikko ("violet light"). The former, being a derivative of lepidine methiodide, is supposed to have the formula 1, 1, 1"-trietethyl-10-lepidyl-4, 4'-trimethine-quinocyanine-1, 1"-diiodide. The latter, being a derivative of 2, 4-dimethylthiazole methiodide, is supposed to have the formula, 3, 3', 3", 4, 4', 4"-hexamethyl-7-(2'-methyl-thiazolyl)-2, 2'-trimethinethiazolocyanine-3, 3"-diiodide. It seems that these drugs stimulated the reticuloendothelial system, increased the phagocytic index as much

as 60%, stimulated the regeneration of tissue, improved general body resistance, and increased the viability and survival of damaged tissue cells. In chronic diseases, effects were demonstrated, particularly in the improvement shown by lepers. Also burns and frost-bite, when thermal tissue damage is involved, responded with acceleration in the healing process. Other newly developed drugs were those for improvement of night vision, "Melanophore hormone", an extract of posterior pituitary of cattle, "Migozal", essential constituent of which is bile secretion promoting curcumin, and "dehydrogallic acid", derived from cow's bile. "Cepharanthin", a preparation of wistaria root alkaloid, is mentioned as useful in the treatment of pulmonary tuberculosis. Other details, including photographs showing the effects of treatment, are to be found in enclosures E-Q.

PB 31967. U.S. NAVAL TECHNICAL MISSION TO JAPAN. General medicine and special diseases in the Japanese Navy. (Rept., Index M-11.) November, 1945. 17 pp. Price: Microfilm, \$1.00; Photostat, \$2.00.

The report lists the available data on the exotic diseases, those peculiar to the Orient. The presence of the "United States Typhus Commission" and the "Army Committee for the Investigation of Schistosomiasis" has removed these subjects from the target list, so that the source of information being naval, the facts reported, figures quoted and opinions expressed must pertain to the subject matter, chiefly as it has come under the cognizance of Japanese naval medical officers. The lack of any adequate system for reporting statistics, the difficulty of communication with the mainland, and the character of the average Japanese naval medical field officer all have prevented accurate or recent figures from reaching the Naval Medical Bureau. Enclosure A describes a new staining method and treatment for amebic dysentery. Enclosure B lists pertinent reports of the Army Committee for the Investigation of Japanese Medical Sciences. Enclosure C lists a few documents forwarded to NMRI, Bethesda, Md.

PB 31970. U.S. NAVAL TECHNICAL MISSION TO JAPAN. Neuro-psychiatry in the Japanese armed forces. (Rept., Index M-D.) December, 1945. 23 pp. Price: Microfilm, \$1.00; Photostat, \$2.00.

The medical personnel in the Japanese army and navy recognize psychiatry as an important field and one with which they are unfamiliar. Very few psychiatrists were available, for example, the six civilian specialists drafted into the navy comprised the entire trained staff. Internists were appointed as ward officers for mental wards. No psychiatric hospitals existed in the navy, although two were organized for the army, while patients were usually cared for in psychiatric wards or general or base hospitals. Treatment of such cases was more on the organic than functional basis. Civilian psychiatry is more advanced in Japan than the military, and a few physicians trained abroad have a good knowledge of the field of psychiatry as of 1939. The wartime isolation of the country, lack of exchange of scientific journals, restrictions on travel *et cetera*, and the bending of every energy of the Japanese Government to the war effort have resulted in the arrest, if not in the retardation, of the progress of this branch of medicine.

PB 23040. DRAEGER, R. H., et alii. A study of personnel injury by solid blast and the design and evaluation of protective devices. (Bur. of Medicine and Surgery Res. Project X-517, Rept. 1.) March, 1945. 34 pp. Price: Microfilm, 50c.; Photostat, \$3.00.

Many cases of lower extremity injuries have occurred aboard ships during landing operations when the craft were subjected to the explosions of shells, mines or torpedoes. The detonation of proximate high explosives results in an initial acceleration in solid material, the so-called "solid blast". Four human cadavers were placed erect on the medium weight high impact shock test machine at the United States Naval Engineering Experiment Station, Annapolis, Maryland, which simulates the movement of ships' deck plates when subjected to solid blast. Other tests were run with protective devices comprising deformable metal loop heels and collapsible cellular plastic mats. Shock tests performed on living subjects protected by the above devices are also described.

PB 23553. CRESCEITELLI, FREDERICK, et alii. The effect of complete inactivation of cholinesterase by di-isopropyl fluorophosphate on conduction in nerve fibres. No date. 19 pp. Price: Microfilm, 50c.; Photostat, \$2.00.

This report is made by the Pharmacology Section, Medical Research Laboratory, Edgewood Arsenal, Md. Local application of eserine or di-isopropyl fluorophosphate (DFP) in Ringer's solution to segments of isolated nerves of the cat or bullfrog led to a block of nerve impulses, indicated by the failure to record action potentials in the nerve beyond the region of application. Such a block was not irreversible, but was abolished by washing the exposed segment of the nerve in Ringer's solution, or in the case of

¹ Supplied by the Information Service of the Council for Scientific and Industrial Research.

DFP by merely lifting the nerve out of solution of the drug. Eserine salicylate in the same concentration (0.01-0.02M) had no blocking action when applied locally. The in-vivo administration of DFP to bullfrogs produced a reduction in the cholinesterase content of the peripheral nerves to a mean value of 23% of that of the control nerves. This indicates that the experimental nerves had virtually no acetylcholine-splitting activity. Such nerves, however, were found to conduct impulses equally as well as the control nerves following either single or repetitive shocks at frequencies as high as 43 per second. The conclusion is reached that in nerve fibres there is no relationship between the action potential and the cholinesterase activity, and that the block which was produced by local application of DFP was not one resulting from the anticholinesterase action of this compound. The report contains a bibliography, tables and neurograms.

PB 23039. DUGGAN, T. L. Investigation of the fungistatic activity of reagents that might be suitable for use in the treatment of epidermophytosis. (Bur. of Medicine and Surgery Res. Project X-469, Rept. 1.) October, 1944. 12 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

Fourteen of forty drugs or proprietary preparations studied had fungistatic activity *in vitro* against all of the test fungi (*Trichophyton roseum*, *Trichophyton purpureum*, *Trichophyton gypseum*, *Epidermophyton inguinale*, *Epidermophyton interdigitale*). A bibliography and three tables are attached. See also PB 23038.

PB 23038. DUGGAN, T. L., AND MOONEY, J. J. Studies of the fungistatic and irritative qualities of agents suggested for the treatment of dermatophytosis. (Bur. of Medicine and Surgery Res. Project X-469, Rept. 2.) August, 1945. 14 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

Twenty-five chemical agents or proprietary preparations were found to have fungistatic activity *in vitro* against *Fusarium oxysporum*, a saprophytic soil fungus often found as a contaminant in dermatophytosis. Ten fungistatic compounds were found to have fungicidal activity *in vitro* against *Trichophyton mentagrophytes*. Thirteen fungistatic or fungicidal preparations were found to produce no skin irritation in guinea-pigs. A bibliography and five tables are attached. See also PB 23039.

PB 22974. GREGG, FREDERICK C., et alii. An experimental study of under-water concussion. (Bur. of Medicine and Surgery Res. Project X-63.) No date. 16 pp. Price: Microfilm, 50c.; Photostat, \$2.00.

This is a report of the United States Department of the Navy, Bureau of Medicine and Surgery. It is based upon data obtained from observing the effects of under-water concussion on animals. Rats, guinea-pigs and goats were used. Rats and guinea-pigs were exposed to explosions of tetryl (dinitrophenylmethylnitramine). The goats were exposed to the effects of a 300-pound depth charge. When death occurred immediately following the blast it was due to pulmonary damage. The respiratory function of the lungs was immediately and totally destroyed. Gross and microscopic pathology of the lesions is described in detail. Later the nature of the blast wave is discussed. The practical application of these observations is their utilization in preventing or minimizing compression injuries. Four materials were investigated: foam rubber, kapok, adhesive plaster and thin metal. Coverings resembling life jackets were made of kapok and foam rubber and fitted on the animals. The results of these studies are tabulated. A bibliography is attached.

PB 23849. TEPPERMAN, JAY. The effect of para-aminopropiophenone-induced methaemoglobinæmia on oxygenation of working muscle in human subjects. (CWS Medical Div. Rept. 72.) February, 1946. 18 pp. Price: Microfilm, 50c.; Photostat, \$2.00.

Four relatively untrained human subjects working on a cycle ergometer showed little or no apparent effect on oxygenation of working muscle in the presence of 7.5% to 15% methaemoglobinæmia which had been induced by *p*-aminopropiophenone (PAPP). Two similar subjects showed definite upward displacement of the blood lactate curve following measured work when the work was performed in the presence of 21.7% and 27.1% methaemoglobinæmia. Subjects who had not ridden a cycle for months or years showed a marked training effect after one week's intensive training. They were trained to plateau performance in about two weeks. Trained subjects working at comparatively light work loads showed no upward displacement of the blood lactate curve with 7% to 17% methaemoglobinæmia. The same subjects showed good internal consistency of performance on successive days. They showed definite and in some cases striking evidence of impairment of oxygenation of muscle when they worked at moderately heavy work loads with 10% to 20% methaemoglobinæmia. The conclusion is that the levels of methaemoglobinæmia previously shown to protect dogs against approximately 6.8 times the lethal

dose of hydrocyanic acid were demonstrated to impair the oxygenation of working muscle in men working at high work loads, but not in the same men working at low work loads. Graphs, tables and bibliography.

PB 23034. PFEIFFER, C. C., AND SNYDER, REBECCA. The use of a commercial dermofluorometer to measure skin fluorescence of subjects on suppressive quinacrine therapy. (Bur. of Medicine and Surgery Res. Project X-429, Rept. 1.) September, 1944. 12 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

In subjects on suppressive quinacrine ("Atebrin") therapy the non-pigmented and well-keratinized portions of the body such as the nails, palms of the hands and soles of the feet fluoresce yellow-white when viewed under ultra-violet light. The only other visible fluorescence occurs in scar tissue and at the sweat pores. The commercial dermofluorometer manufactured by the Photovolt Corporation was used throughout this study. Dermofluorometer readings of palm or skin fluorescence show a steady rise after ten days on the usual suppressive dose of quinacrine. The peak readings are twice those of the control readings in the normal male subject. Except for a definite lag, the rise and fall in palm or skin fluorescence closely follow the plasma quinacrine levels. Quinacrine, or its fluorescent degradation product, attains a level of 3 to 25 milligrammes per kilogram in the keratin layer of the skin, the hair, and the toenails and fingernails. Viewing the fingernails under ultra-violet light may be of value in determining the treatment history of a patient with malaria. See also PB 23035 and PB 23036.

PB 23054. BIRREN, J. E., et alii. Effects of anoxia on performance at several simulated altitudes. (Bur. of Medicine and Surgery Res. Project X-293, Rept. 2.) February, 1945. 19 pp. Price: Microfilm, 50c.; Photostat, \$2.00.

Twenty-nine subjects were given "flights" at one or more simulated altitudes, 10,000, 14,000, 15,000 and 18,000 feet, in a low-pressure chamber. The subjects were given a cycle of those tests (critical flicker frequency, perimetry of the visual field with a red target, and body sway) once at sea level before "ascent", five times during an hour under the anoxic conditions, and once more immediately upon return to sea level. Mean test performance was significantly poorer ($P < 1\%$) at all altitudes studied than at sea level, except body sway at 10,000 feet. Test performance showed the expected deterioration with increasing altitude, although decrement in mean performance under most conditions was less than one standard deviation of the distribution of measurements at sea level. Mean performance during the hour at 18,000 feet suggests progressive deterioration on all three tests. Individual responses to the anoxic conditions were variable with some subjects showing better performance at higher than at lower altitudes. Deterioration in performance (either absolute or relative) under anoxic conditions was essentially uncorrelated among the three tests. Residual effects of the hour under the anoxic conditions were not marked when measured within fifteen minutes of the return to sea level. The performance of subjects who collapsed or who were in imminent danger of collapse during their last test before breathing oxygen was compared with their initial sea level measurements. The comparison indicated that body sway had increased significantly more in subjects manifesting signs of collapse than it had for the mean of a group of subjects at 18,000 feet. A bibliography, seven tables and three graphs are attached.

PB 31882. FRIDELL, H. Atomic energy and cancer. No date. 16 pp. Price: Microfilm, \$1.00; Photostat, \$2.00.

Research on radiation aspects which was part of the work of the Medical Section of the Manhattan Project, and the possibility of applying data collected during research on this project and new radioactive materials to cancer research are discussed in this lecture. Two possible fields of development were pointed out. The first is the opportunity for improving the therapeutic approach. New radiations and new radioactive materials in an abundance which were not previously imagined are now possible. These might be used for external radiation, for interstitial radiation, and as radioactive materials in specific compounds which may be localized in various tissues (phosphorus, strontium and iodine). A corollary to this is the possible introduction into tumours of elements which are, so to speak, triggered by neutrons to release large amounts of ionizing radiation. A second and perhaps more important approach has been made possible by the ability to produce radioactive isotopes in abundance to study the unwarranted behaviour of the cancer cell. The key in this probably lies in the use to which we may put C^{14} , but other elements (hydrogen, nitrogen, sulphur *et cetera*) will be useful. Discussion of the following is included: estimation of safe levels of radiation; mechanism of radiation effects; metabolism of radioactive materials; therapeutic measures; assay of radioactive materials deposited in the body; and the utilization of tagged elements in cancer research.

British Medical Association News.

ANNUAL MEETING.

THE annual meeting of the New South Wales Branch of the British Medical Association was held at the Robert H. Todd Assembly Hall, British Medical Association House, 135, Macquarie Street, Sydney, on March 27, 1947, Dr. A. C. THOMAS, the President, in the chair.

ANNUAL REPORT OF THE COUNCIL.

On the motion of Dr. A. J. Collins, seconded by Dr. R. H. Macdonald, the annual report of the Council was received and adopted. The report is as follows:

The Council presents the following report on the work of the Branch for the year ended March 27, 1947.

Membership.

The membership of the Branch is now 2,624, as against 2,480 at the date of the last report. The additions have included 231 elections, re-elections and resumptions, and 57 removals into the area of the Branch, while the losses have included 15 by resignation, 85 removals out of the area of the Branch, 17 by default in payment of subscription, and 27 by death. The losses by death were as follows: Dr. J. T. Tennent, Dr. G. A. Buchanan, Dr. A. M. Gledden, Dr. C. V. Bowker, Professor H. Whitridge Davies, Dr. R. W. Crooke, Dr. A. S. Curtin, M.C., Dr. J. H. Cramsie, Dr. J. A. B. D. Barton, Dr. F. Barrington, Dr. F. McCallum, Dr. J. C. W. Halliday, Dr. S. N. Rorke, Dr. B. Diethelm, Dr. G. Gatenby, Dr. A. W. Wethen, Dr. A. J. Gibson, Dr. A. A. Pain, Dr. W. R. Wilson, Dr. A. M. Burge, Dr. D. J. Crossin, Dr. A. Campbell, Dr. H. C. McDouall, Dr. J. T. P. Tansey, Dr. H. Peet, Dr. W. W. Martin, Dr. H. S. Marsh.

Obituary.

Alfred John Gibson.

The Branch has suffered a severe loss in the death of Dr. Alfred J. Gibson. A member of the Branch from 1912, when he joined immediately after graduation, until his death on November 25, 1946, he was a member of Council from 1929 to 1936, Honorary Medical Secretary from 1929 to 1932, and President in 1936. The deep sympathy of the Branch is extended to his family.

Frank McCallum.

With the passing of Dr. Frank McCallum, Director-General of Health of the Commonwealth, on September 25, 1946, the medical profession and the public have suffered a great loss. The deep sympathy of the Branch is extended to his family.

Meetings.

Ten ordinary meetings of the Branch (including the annual general meeting) and two extraordinary general meetings of the Branch and eight clinical meetings were held. The average attendance was 77. Nine of the ordinary meetings were held in conjunction with meetings of special groups, namely: April 26, with the Section of Neurology, Psychiatry and Neurosurgery and the Section of Medicine; May 30, with the Section of Medicine, the Section of Obstetrics and Gynaecology and the Section of Radiology; June 27, with the Section of Sociological Medicine and the Section of Neurology, Psychiatry and Neurosurgery; July 25, with the Section of Medicine and the Section of Pathology and Bacteriology; August 29, with the Section of Urology and the Section of Obstetrics and Gynaecology; September 26, with the Oto-Rhino-Laryngological Society of New South Wales, the Section of Paediatrics and the Australian Dental Association (New South Wales Branch); November 1, with the Section of Medicine and the Ophthalmological Society of New South Wales; November 28, with the Resident Medical Officers' Special Group; December 12, with the Section of Obstetrics and Gynaecology and the Section of Paediatrics. The clinical meetings were held at the Royal Alexandra Hospital for Children, Royal Prince Alfred Hospital, Royal North Shore Hospital, Royal Hospital for Women, Lewisham Hospital, Sydney Hospital, Saint Vincent's Hospital and Broughton Hall Psychiatric Clinic. The business of the meetings included eighteen papers, five addresses, numerous reports of cases, exhibits and demonstrations and showing of films. At one extraordinary general meeting four ex-prisoner-of-war medical officers, namely, Dr. N. H. Rose, Dr. K. B. Fagan, Dr. S. E. L. Stening and Dr. W. Cotter Harvey, gave addresses on medical experiences during internment, and at another extraordinary general

meeting Dr. J. G. Hunter, General Secretary of the Federal Council of the British Medical Association in Australia gave an address on "Health Services in Great Britain: Views of the Government and the Medical Profession".

Representatives.

The Branch was represented as follows:

1. Council of the British Medical Association: (1938-1946) Professor R. J. A. Berry, (1946-1949) Dr. Isaac Jones.
2. Federal Council of the British Medical Association in Australia: Dr. A. J. Collins, D.S.O., M.C., Dr. W. F. Simmons.
3. Contract Practice Committee of the Federal Council: Dr. H. R. R. Grieve.
4. Australasian Medical Publishing Company, Limited: Dr. T. W. Lipscomb, Dr. A. M. Davidson, O.B.E. (resigned December, 1946), Dr. L. F. Dods, Dr. W. L. Calov.
5. New South Wales Post-Graduate Committee in Medicine: Dr. A. C. Thomas, Dr. G. C. Wilcock, O.B.E., M.C.
6. Ophthalmic Association, Limited: Dr. Colin C. Ross.
7. The Flying Doctor Service of Australia: Representative, Dr. George Bell, O.B.E.; Deputy Representative, Dr. J. G. Hunter.
8. Council of the Bush Nursing Association: Dr. A. C. Thomas.
9. Metropolitan Hospitals Contribution Fund of New South Wales: Dr. Hugh Hunter.
10. Saint John Ambulance Association: Dr. A. C. Thomas.
11. Standards Association of Australia: (i) Institutional Supplies Committee, Dr. S. W. G. Ratcliff; (ii) Sectional Committee on Interior Illumination of Buildings, Dr. N. M. Macindoe; (iii) Committee on Standards of Laboratory Glassware and Volumetric Glassware, Dr. F. S. Hansman; (iv) Committee on Protective Glass for Welding, Dr. J. A. F. Flynn; (v) Committee on Plaster of Paris for Orthopaedic Purposes, Dr. L. J. Woodland.
12. Medical Officers' Relief Fund (Federal): Local Committee of Management for New South Wales, Dr. E. H. M. Stephen, Dr. A. M. Davidson, O.B.E. (resigned December, 1946), Dr. A. J. Collins, D.S.O., M.C., Dr. A. J. Murray, O.B.E.
13. Police Boys' Club: Dr. A. C. Thomas.
14. Medical Appointments Advisory Committee (Hospitals Commission of New South Wales): Dr. L. A. Dey.
15. Australian League of Nations Union—Refugee Emergency Council: Dr. E. P. Blashki.
16. Special Departmental Committee for the Investigation of Maternal Deaths: Dr. A. M. Davidson, O.B.E. (resigned December, 1946), Dr. E. A. Tivey.
17. Recreation and Leadership Movement: Professor Harvey Sutton.
18. Council of the Royal Society for the Welfare of Mothers and Babies: Sir Robert Wade, Dr. E. H. M. Stephen.
19. New South Wales State Medical Coordination Committee: Dr. K. S. Parker, M.C., E.D.
20. New South Wales Medical Board: Dr. J. R. Ryan.
21. The Free Library Movement: Dr. E. H. M. Stephen.
22. Workers' Educational Association: Dr. R. A. M. Allen, M.C.
23. New South Wales Institute of Hospital Almoners: Dr. R. A. R. Green.
24. Council of Education: Dr. A. J. Collins, D.S.O., M.C.
25. New South Wales War Loans and War Savings Certificates Committee: Dr. A. J. Collins, D.S.O., M.C.
26. Society of Laboratory Technicians of Australasia: Dr. Jean Armytage.
27. New South Wales Society for Crippled Children: Dr. E. H. M. Stephen.
28. Medical Finance, Limited, Board of Directors: Dr. R. Jeremy, Dr. A. M. Davidson, O.B.E. (resigned December, 1946), Dr. A. C. Thomas, Dr. George Bell, O.B.E., Dr. G. C. Halliday.
29. Technical Bodies Advisory Committee on Housing Standards: Professor Harvey Sutton.
30. Housing Problem Committee, Institute of Engineers: Professor Harvey Sutton, Dr. Mary Puckey.
31. New South Wales Institute of Dietitians: Dr. H. R. R. Grieve.
32. Coordinating Council for the Physically Handicapped: Delegate, Dr. R. A. R. Green.
33. Road Safety Council of New South Wales: (i) Council of Management, Dr. A. C. Thomas; (ii) Committee for the Determination of Visual Standards for Motor Drivers, Dr. N. McA. Gregg; (iii) Committee for the

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Determination of Physical Fitness of Drivers of Motor Vehicles, Dr. J. H. Halliday.

34. Federal Medical War Relief Fund: Local Committee of Management, Dr. A. J. Collins, D.S.O., M.C., Dr. A. C. Thomas, Dr. A. M. Davidson, O.B.E. (resigned December, 1946), Dr. A. J. Murray, O.B.E.

Council.

(a) The attendance of members of the Council and of the standing committees was as set out in the accompanying table.

(b) The representatives of the Local Associations of Members appointed on the invitation of the Council to attend the regular quarterly meetings of the Council were as follows: Dr. E. P. Dark (Blue Mountains), Dr. J. H. Coles (Central Southern), Dr. O. J. Ellis (Central Northern), Dr. G. N. M. Aitkens (Central Western), Dr. S. G. Nelson (Eastern Suburbs), Dr. R. L. Douglas (Eastern District), Dr. L. W. Wing (Far South Coast and Tablelands), Dr. G. F. Elliott (Illawarra Suburbs), Dr. G. L. Howe (Kuring-gai District), Dr. T. S. Douglas (Northern District), Dr. J. R. Ryan (North Eastern), Dr. A. L. Caselberg (South Eastern), Dr. C. H. Jaede (South Sydney), Dr. J. V. Mutton (Warringah District), Dr. R. D. Mulvey (Western), Dr. T. Y. Nelson (Western Suburbs).

Library.

Dr. J. Kempson Maddox was appointed to the position of Honorary Librarian.

Visitors to the library	7,548
Books lent to members	1,545
Journals lent to members	5,047
Books added to the library	242
Journals added to the library	15

During the past twelve months the number of visitors to the library exceeded the previous year's figures by 2,378, representing an increase of 46%. The total number of publications lent was 6,592, an increase of 2,171, and the number of new books added to the library was 75 in excess of the 1945-1946 period.

The Association is pleased to record its appreciation of donations received from the following: the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, United Kingdom Information Office, Royal Alexandra Hospital for Children, United States Information Library, University of California, American Consulate, Royal College of Physicians, Edinburgh, Department of Public Health of New South Wales, Royal Australasian College of Physicians, Post-Graduate Committee in Medicine in the University of Sydney, Royal Australasian College of Surgeons, National Health and Medical Research Council, British Medical Association (London), Mayo Clinic, Rochester, University of Melbourne, Department of Industrial

Welfare, Department of Labour and National Service, Sydney University Medical Students' Society, International Labour Office, Australian Institute of Anatomy, Commonwealth Department of Health, National Fitness Council of New South Wales, Josiah Macy, Junior, Foundation (United States of America), Correspondence College, London, Messrs. W. Warner and Company, Angus and Robertson, Limited, Consolidated Press, Limited, Professor B. T. Mayes, Dr. J. C. Belisario, Dr. A. G. Butler, Dr. F. W. Clements, Dr. C. E. Corlette, Dr. F. C. Crossle, the late Dr. W. C. Daish, Dr. L. A. Dey, Dr. George Scott Dow (United States of America), Dr. B. T. Edye, Sir Frank Fox, Dr. R. A. R. Green, Dr. J. D. R. Herlihy, Dr. G. C. Hughes, Dr. H. Hunter, Dr. J. G. Hunter, Dr. J. K. Maddox, Dr. H. S. Marsh, Dr. C. G. McDonald, Dr. W. A. Price (United States of America), Dr. E. H. Stokes and Sir Robert Wade, the Section of Radiology, the Section of Obstetrics and Gynaecology, the Section of Medicine, and the Section of Pathology and Bacteriology.

Affiliated Local Associations of Members.

Blue Mountains (affiliated 1944): *Chairman*, Dr. G. T. Ferris; *Honorary Secretary*, Dr. E. P. Dark. Membership, 16. Four meetings were held.Border (affiliated 1908): *Chairman*, Dr. R. A. Robertson; *Honorary Secretary*, Dr. F. G. Favoloro. Membership, 15. Two meetings were held.Broken Hill (affiliated 1942): *Chairman*, Dr. W. E. George; *Honorary Secretary*, Dr. R. M. Hains. Membership, 12. Ten meetings were held.Canterbury-Bankstown (affiliated 1930): *Chairman*, Dr. R. Segal; *Honorary Secretary*, Dr. G. Russell.Central Northern (affiliated 1910): *Chairman*, Dr. A. J. Ostinga; *Honorary Secretary*, Dr. E. J. Egan. Membership, 79. Five meetings were held.Central Southern (affiliated 1909): *Honorary Secretary*, Dr. R. G. Woods.Central Western (affiliated 1910): *Chairman*, Dr. J. M. G. Pirie; *Honorary Secretary*, Dr. K. S. M. Brown. Membership, 29. Two meetings were held.Eastern District (affiliated 1913): *Chairman*, Dr. N. E. McLaren; *Honorary Secretary*, Dr. R. L. Douglas. Membership, 29. One meeting was held.Eastern Suburbs (affiliated 1911): *Chairman*, Dr. H. A. Ryan; *Honorary Secretary*, Dr. C. M. Burns. Membership, 107. Three meetings were held.Far South Coast and Tablelands (affiliated 1935): *Chairman*, Dr. E. A. Marshman; *Honorary Secretary*, Dr. L. W. Wing.Illawarra Suburbs (affiliated 1913): *Chairman*, Dr. N. H. W. Saxby; *Honorary Secretary*, Dr. G. W. Ashby. Membership, 60. Four meetings were held.

ATTENDANCE AT COUNCIL AND STANDING COMMITTEE MEETINGS.

	Council.	Committees.					
		Executive and Finance.	Organization and Science.	Medical Politics.	Hospitals.	Ethics.	Medical Sociology and Research.
BELL, GEORGE	..	10	11	1	11	2	1
BLACKBURN, SIR CHARLES	..	8	—	—	—	3	—
BROWN, K. S. M.	..	8	—	—	—	—	2
COLLINS, A. J.	..	9	4	1	10	3	1
DAVIDSON, A. M. ¹	..	7	6	—	—	—	2
DEY, L. A.	..	9	—	—	—	—	—
EDYE, B. T.	..	9	—	—	2	3	2
GRINER, H. B. R.	..	11	9	3	10	1	1
HALLIDAY, G. C. ²	..	7	—	—	—	—	—
MCKINTOSH, A. M. ³	..	8	9	—	—	—	—
MADDON, R. H.	..	10	—	—	—	—	—
MADDUX, J. K. ⁴	..	4	3	—	—	—	—
MILLER, I. D.	..	8	—	3	—	—	—
MURRAY, A. J.	..	11	—	—	13	2	3
NOAD, K. B. ⁴	..	5	—	2	—	—	—
SIMMONS, W. F.	..	9	9	—	17	—	—
STENING, G. G. L.	..	9	—	—	—	3	—
THOMAS, A. C.	..	11	11	3	15	3	2
TYVY, B. A.	..	11	10	—	13	—	2
WILCOX, G. C.	..	8	5	—	—	—	—
Meetings held	..	11	12	3	17	3	2

¹ Resigned December, 1946.² Leave of absence from April to October, 1946.³ Leave of absence from May to December, 1946.⁴ Leave of absence from July, 1946, to February, 1947.⁵ Full time military service.

Kuring-gai District (affiliated 1929): *Chairman*, Dr. C. J. King; *Honorary Secretary*, Dr. J. Woolnough. Membership, 56. Three meetings were held.

Northern District (affiliated 1911): *Chairman*, Dr. C. Anderson; *Honorary Secretary*, Dr. R. J. Jackson. Membership, 65. Two meetings were held.

North Eastern (affiliated 1918): *Chairman*, Dr. A. R. Lewis; *Honorary Secretary*, Dr. M. R. Robertson. Membership, 52. Four meetings were held.

South Eastern (affiliated 1914): *Chairman*, Dr. C. W. Luscombe; *Honorary Secretary*, Dr. M. C. McKinnon.

Southern District (affiliated 1909): *Chairman*, Dr. C. R. Sim; *Honorary Secretary*, Dr. H. W. Austin. Membership, 73. One meetings was held.

South Sydney (affiliated 1909): *Chairman*, Dr. A. S. Boyd; *Honorary Secretary*, Dr. C. H. Jaede. Membership, 29. Two meetings were held.

Warringah District (affiliated 1929): *Chairman*, Dr. J. E. F. Deakin; *Honorary Secretary*, Dr. M. Elliot Smith. Membership, 93. Two meetings were held.

Western (affiliated 1908): *Chairman*, Dr. S. L. Cameron; *Honorary Secretary*, Dr. S. R. Dawes. Membership, 72. One meeting was held.

Western suburbs (affiliated 1908): *Honorary Secretary*, Dr. R. J. J. Speight.

Annual Meeting of Delegates.

The thirty-third annual meeting of delegates of the affiliated local associations of members with the Council was held on Friday, October 4, 1946.

The delegates present at the meeting were as follows: Blue Mountains, Dr. E. P. Dark; Border, Dr. L. S. Woods; Broken Hill, Dr. A. E. Panting; Canterbury-Bankstown, Dr. R. Segal; Central Southern, Dr. R. G. Woods; Central Northern, Dr. O. J. Ellis; Central Western, Dr. G. N. M. Aitkens; Eastern Suburbs, Dr. C. M. Burns; Eastern District, Dr. N. E. McLaren; Illawarra Suburbs, Dr. G. F. Elliott; Kuring-gai District, Dr. G. L. Howe; Northern District, Dr. R. J. Jackson; North Eastern, Dr. J. R. Ryan; Southern District, Dr. R. Cuttle; South Eastern, Dr. A. L. Caselberg; South Sydney, Dr. C. H. Jaede; Warringah District, Dr. J. V. Mutton; Western, Dr. R. D. Mulvey, M.C.; Western Suburbs, Dr. T. Y. Nelson.

Special Groups for the Study of Special Branches of Medical Knowledge.

Anæsthesia (inaugurated 1934): *Chairman*, Dr. S. V. Marshall; *Honorary Secretary*, Dr. A. Distin Morgan. Membership, 16. Three meetings were held.

Genito-Urinary and Venereal Diseases (inaugurated 1928).

Medical Literature and History (inaugurated 1925).

Medicine (inaugurated 1924): *Chairman*, Dr. L. H. Hughes; *Honorary Secretary*, Dr. F. A. E. Lawes. Membership, 96. Six meetings were held, four in conjunction with meetings of the Branch.

Neurology, Psychiatry and Neurosurgery (inaugurated 1924): *Chairman*, Professor W. K. Inglis; *Honorary Secretary*, Dr. W. E. Audley. Membership, 38. Eight meetings were held, two in conjunction with meetings of the Branch.

Obstetrics and Gynaecology (inaugurated 1925): *Chairman*, Dr. J. N. Chesterman; *Honorary Secretary*, Dr. F. N. Chenhall. Membership, 75. Five meetings were held, three in conjunction with meetings of the Branch.

Orthopaedic Group (inaugurated 1923): *Chairman*, Dr. R. L. Stephen; *Honorary Secretary*, Dr. C. C. McKellar. Membership, 11. Five meetings were held.

Oto-Rhino-Laryngological Society of New South Wales (inaugurated 1924): *Chairman*, Dr. N. H. Meacle; *Honorary Secretary*, Dr. R. H. Beettinton. Membership, 39. Five meetings were held, one in conjunction with a meeting of the Branch.

Pædiatrics (inaugurated 1921): *Chairman*, Dr. L. A. Dey; *Honorary Secretary*, Dr. S. E. L. Stening. Membership, 25. Five meetings were held, two in conjunction with meetings of the Branch.

Pathology and Bacteriology (inaugurated 1924): *Honorary Secretary*, Dr. E. B. Jones. One meeting was held in conjunction with a meeting of the Branch.

Preventive Medicine (inaugurated 1922): *Chairman*, Professor Harvey Sutton; *Honorary Secretary*, Dr. E. S. A. Meyers.

Radiology (inaugurated 1926): *Chairman*, Dr. A. T. Nisbet; *Honorary Secretary*, Dr. H. M. Cutler. One meeting was held in conjunction with a meeting of the Branch.

Resident Medical Officers' Special Group (inaugurated 1945): *Chairman*, Dr. R. H. Syred; *Honorary Secretary*, Dr. Stefania W. Siedlecky. Membership, 11. Five meetings were held, one in conjunction with a meeting of the Branch.

Sociological Medicine (inaugurated 1944): *Chairman*, Dr. D. J. Anderson; *Honorary Secretary*, Dr. L. E. Hewitt. One

meeting was held in conjunction with a meeting of the Branch.

Surgery (inaugurated 1925).

Urology (inaugurated 1940): *Chairman*, Dr. J. W. S. Laidley; *Honorary Secretary*, Dr. M. S. S. Earlam. Membership, 10. One meeting was held in conjunction with a meeting of the Branch.

Permission was given for the formation of a Section of Allergy. The objects of the special group are to further the study of allergy, to teach the principles of allergy to those interested, and to cooperate with the Branch and special groups in lectures and discussions pertaining to allergic problems. The Honorary Secretary is Dr. Bernard Riley, 143, Macquarie Street, Sydney.

British Medical Association Lectures.

Lectures were arranged as follows:

Broken Hill Medical Association, Broken Hill, November 30, 1946: Dr. A. J. Collins and Dr. A. C. Thomas, "Peptic Ulcer"; Dr. A. J. Collins, "Diagnosis and Prognosis of Heart Disease"; Dr. A. C. Thomas, "The Acute Abdomen".

Northern District Medical Association, Armidale, December 15, 1946: Dr. T. M. Greenaway, "A Tribute in Retrospect and Prospect".

The Federal Council of the British Medical Association in Australia.

(a) *Meetings*.—The Federal Council of the British Medical Association in Australia met in Adelaide on November 12, 13 and 14, 1946, and in Melbourne on March 2, 3 and 4, 1947. At these meetings the Branch was represented by Dr. W. F. Simmons and Dr. A. J. Collins.

(b) *Powers*.—Council decided to agree to the request of the Federal Council that, in respect of questions on which Branch Councils have made decisions and reported such decisions to the Federal Council, the decisions of the Federal Council made after consideration of such reports shall become the policy of all the Branches, and that Branch Councils should confer on the Federal Council the constitutional power to state these decisions to all interested bodies as the Association's policy, provided that when important facts in relation to any such questions have come to light, subsequent to their consideration by Branch Councils such facts shall be referred to Branch Councils for further consideration before any binding decision on the question concerned is come to by the Federal Council.

(c) *Membership: Branch Representation*.—The constitution of the Federal Council has been amended to provide for an increase in the number of representatives of the New South Wales Branch on the Federal Council from two to four, and of the Victorian Branch from two to three. The number of representatives of each of the other four Branches remains the same—namely, two.

Secretariat.

In view of the increased activities of the Branch coming about in the ordinary way of growth and development, and as the Medical Secretary, Dr. J. G. Hunter, is also General Secretary of the Federal Council and is required to devote the greater part of his time to that body, it was decided to appoint a full-time Assistant Medical Secretary. Dr. Hugh Hunter was appointed to the position.

Medical Services Advisory Committee.

Following the termination of the activities of the New South Wales State Medical Coordination Committee in the early part of 1946, the Council decided to appoint a committee, known as the Medical Services Advisory Committee, whose duties would be to assist ex-service medical officers to reestablish themselves in civil practice, to inform final year students and recently qualified practitioners of hospital appointments, and generally to advise members in regard to opportunities in civil practice.

Contract Practice: Federal Common Form of Agreement.

Council has approved of the terms and conditions of the Federal Common Form of Agreement as submitted by the Federal Council to the Friendly Societies of Australia, whose decision in regard thereto will be made at a meeting on April 21, 1947.

Public Hospitals.

(a) *Appointment of Honorary Medical Officers*.—The boards of all metropolitan hospitals, country base hospitals and Newcastle Hospital were advised that, in the opinion of the

Council, a vacancy on the senior honorary staff of a public hospital should be filled by the candidate already on the honorary staff and next in line of succession, provided that he has carried out his duties efficiently and to the satisfaction of the board of the hospital.

(b) *Broken Hill and District Hospital: Free Out-Patient Scheme.*—With the recent amendment to the *Public Hospitals Act*, hospital contribution funds throughout country areas ceased to exist. In the case of the Workers' Contribution Fund at Broken Hill, which was founded for the purpose of providing in-patient treatment at the Broken Hill and District Hospital, it was the desire of the Board of the hospital that the machinery of the fund should be used for the purpose of providing a free out-patient service to the subscribers. The proposals were not acceptable to Council, whose representatives, Dr. A. C. Thomas, President, Dr. H. R. R. Grieve, President-Elect, Dr. A. J. Collins, Honorary Secretary, and Dr. J. G. Hunter, Medical Secretary, submitted its case at a conference with representatives of the Hospital Board, the Workers' Contribution Fund and local members of the Association which was held at Broken Hill on November 29, 1946.

Chair of Child Health.

Early in 1946 the Council recommended to the Senate of the University of Sydney the establishment of a Chair of Child Health. The Senate was, however, unable to adopt the recommendation.

Early in 1947 advice was received from the Federal Council that the Senate had sought advice from the National Health and Medical Research Council as to whether arrangements could be made for the formation in the School of Public Health and Tropical Medicine of a special Department of Child Health. The advice from the Federal Council further stated that the National Health and Medical Research Council had decided to ask the Commonwealth Government to set up such a department at the School of Public Health and Tropical Medicine, Sydney.

Medical Benefits Fund of New South Wales, Limited.

This company, having been registered under the *Companies Act*, is now actively engaged in preparing its scheme for presentation to the public.

Australasian Medical Publishing Company, Limited.

Dr. W. L. Calov was appointed as a representative of the Branch on the Australasian Medical Publishing Company, Limited.

New South Wales Medical Board.

Under the provisions of the New South Wales *Medical Practitioners Act*, Dr. J. R. Ryan, of Lismore, was appointed on the nomination of the Branch as a member of the New South Wales Medical Board.

The conditions attached to this appointment are that the appointee shall be a general practitioner who has for five years prior to his appointment practised his profession outside the County of Cumberland.

Medical Services of Repatriation Commission.

The Repatriation Commission advised that with the concurrence of the Minister for Repatriation a Special Advisory Committee had been appointed to examine the existing set-up of the Commission's medical service throughout the Commonwealth and to submit a scheme of reorganization.

At the invitation of the Commission, Dr. A. J. Collins was appointed by the Council to submit its views to the committee during its visit to Sydney.

State Medical Research Council.

At the invitation of the Minister for Health, Dr. W. F. Simmons was appointed representative of the Branch on the State Medical Research Council.

The functions of this organization, which has been set up by the New South Wales Government, are broadly to promote medical research in hospitals on a systematic and coordinated basis with the objectives of: (i) carrying out an initial survey of the present research activities being conducted in hospitals and making recommendations in regard thereto; (ii) advising the Government of New South Wales (a) as to the expenditure of money upon medical research and as to projects of medical research generally; (b) as to the expenditure of money specifically appropriated as money to be spent on the advice of this Council; (c) of the merits of reported cures or methods of treatment which are, from time to time, brought forward for recognition.

Resident Medical Officers' Salaries.

At the request of Council an application was made by the Hospitals Association of New South Wales to the Industrial Commission for permission to increase the salaries of resident medical officers of hospitals who are members of this organization to £260 per annum during the first year after graduation and £390 per annum during the second year after graduation. The application was granted.

The Hospitals Association of New South Wales is an industrial union of employers, its membership consisting of most of the hospitals of New South Wales other than the five metropolitan hospitals which had made a successful application to the court in the previous year, and a few others.

Department of Medical Sociology and Research.

At the desire of the Australian Broadcasting Commission the daily "Kitchen Front" talks on nutrition and diet have been continued. The series is now in its fourth year. A new feature is a weekly talk, "Question Time", in which a wide range of questions dealing with nutrition, though often with faddist beliefs or unscientific theories, are submitted by members of the public, and answered as "by the B.M.A. Spokesman".

Talks were provided for the evening "News Commentary" on the subjects of "Leprosy in Australia", "New Drugs—With Care", and "Does Australia Lack High Medical Skill?".

Assistance was given to the Press on various occasions in the writing or checking of articles, and material prepared by the department has been used in *The A.B.C. Weekly*.

A series of fifteen-minute talks on health and medical subjects is in preparation, the first being on "Tuberculosis as a Social Problem". These are to be given among the "Science Talks" of the evening programme.

British Medical Agency of New South Wales, Limited.

The annual general meeting of the British Medical Agency of New South Wales, Limited, was held on October 1, 1946. Dr. George Bell, who was in the chair, stated that the directors were pleased to report that the operations of the company for the year ended June 30, 1946, after making the necessary provision for taxation, showed a substantial net profit, and that it was expected that the results for the ensuing year would again be satisfactory.

Medical Finance, Limited.

The annual general meeting of Medical Finance, Limited, was held on October 1, 1946. The chairman, Dr. George Bell, in presenting the report of the directors for the twelve months ended June 30, 1946, stated that although difficulties arising out of war conditions were still continuing, the year's operations showed a small profit.

Premises Revenue Account.

The Premises Revenue Account discloses a net surplus of £1,663 as against a net surplus of £1,271 for the year ended December 31, 1945, thus showing an increase of £392 in the net surplus revenue earned. This increase is accounted for by a net increase in income of £340 and a net decrease in expenditure of £52.

The percentages of rent revenue, expenses and depreciation and the percentage of net surplus for the year to the capital value of the land and building (British Medical Association House) as shown by the books at December 31, 1946, namely, £152,848, with the previous year's percentages in parentheses, are as follows:

Rent Revenue (including amount charged for British Medical Association Branch offices <i>et cetera</i>)	11.7%	(11.3%)
Sundry Expenses, Interest and Provision for Painting Building	8.8%	(8.8%)
Depreciation of Building	1.8%	(1.7%)
		10.6%	
		1.1%	(0.8%)

Financial Statement.

The Council has pleasure in presenting to members the balance sheet and accounts in respect of the financial year which terminated on December 31, 1946.

The net surplus of revenue over expenditure for the year amounted to £2,391 5s. 1d. after making provision for all known expenses.

The sum of £3,063 16s. 1d. has been written off for depreciation of the building (British Medical Association

NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

Balance Sheet as at December 31, 1946.

FIXED LIABILITIES.				FIXED ASSETS.					
	f	s.	d.	f	s.	d.	f	s.	d.
Debentures—									
85 4% Series "A" at £10 each	850	0	0	Land and Buildings, B.M.A.					
359 4-65% Series "B" at £50 each	17,950	0	0	House, at Cost less Depreciation					
211 4-65% Series "C" at £10 each	2,110	0	0	on Building	152,848	11	3		
	20,910	0	0	Library, at Valuation less De-					
Less Amount Unpaid .. .	54	0	0	preciation	2,461	14	10		
	20,856	0	0	Office Furniture and Equipment, at					
Australian Mutual Provident Society				Valuation less Depreciation	807	16	2		
(Secured by Mortgage over				Debentures in Other Companies—					
Property, B.M.A. House) .. .	53,000	0	0	Australasian Medical Publishing	100	0	0		
	73,856	0	0	Company, Limited (face value)					
				Commonwealth Treasury Bonds					
				(face value) .. .	7,000	0	0		
								163,218	2 3
CURRENT LIABILITIES.				FLOATING ASSETS.					
Sundry Creditors .. .	448	5	10	Sundry Debtors (after making pro-					
Interest Accrued on Mortgage ..	187	14	2	vision for Doubtful Debts)—					
Deposit at Call .. .	700	0	0	Sundry Tenants, Rent, etc. ..	1,700	6	10		
	1,336	0	0	Cash on Hand .. .	30	17	3		
OTHER CREDIT BALANCES.				Commercial Banking Co. of					
Subscriptions Paid in Advance ..	103	16	3	Sydney, Limited—Premises and					
Provision for Taxation ..	3,348	9	0	Branch Current Accounts ..	596	6	3		
Provision for Painting of Building	1,471	0	0					2,327	10 4
	4,923	5	3						
ACCUMULATED FUNDS.				OTHER DEBIT BALANCES.					
Balance at December 31, 1945 ..	83,649	8	5	Prepaid Insurance, Rates <i>et cetera</i>					
Add Surplus for Year ended									
December 31, 1946—									
Premises A/c £1,663 12 9									
Branch A/c . 727 13 2									
	2,391	5	11						
	86,040	14	4						
	£166,155	19	7						
	£166,155	19	7						

Sydney, February 27, 1947.

A. C. THOMAS, President.
GEORGE BELL, Honorary Treasurer
ROBT. J. STIFFE, Financial Secretary

We have examined the foregoing Balance Sheet with the Books of Account of the New South Wales Branch of the British Medical Association, and, having obtained all the information and explanations we have required, we are of the opinion that such Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Company's affairs according to the best of our information and the explanations given to us and as shown by the books of the Company. In our opinion the Register of Members and other records which the Company is required to keep by the New South Wales Companies Act, 1936, or by its Articles have been properly kept.

London Bank Chambers,
18-20 Martin Place,
Sydney.

F W. DUESBURY & Co.,
Chartered Accountants (Aust.)

BRANCH ACCOUNT.

Income and Expenditure Account for the Year Ended December 31, 1946.

House), plant, office furniture and equipment, and the library.

A sum of £200 has been provided out of the current year's revenue to create a reserve for painting the exterior of the building. This amount, for the time being, is used in the business of the Association.

Dr. George Bell moved that the balance sheet of the Branch and income and expenditure account of the Branch and of the premises should be received. The motion was seconded by Dr. G. C. Willcocks. Dr. Willcocks also seconded Dr. Bell's motion that the statements be adopted. Both motions were carried.

ELECTION OF OFFICE-BEARERS.

Dr. A. C. Thomas announced that the following had been elected members of the Council for the ensuing year: Dr. George Bell, Sir Charles Blackburn, Dr. A. J. Collins, Dr. T. S. Douglas, Dr. B. T. Edye, Dr. G. C. Halliday, Dr. R. H. Macdonald, Colonel A. M. MacIntosh, Dr. J. K. Maddox, Dr. I. D. Miller, Dr. A. J. Murray, Dr. T. Y. Nelson, Dr. K. B. Noad, Dr. K. C. T. Rawle, Dr. W. F. Simmons, Dr. G. L. Stenning, Dr. E. A. Tivey, Dr. G. C. Willcocks.

Messrs. F. W. Duesbury and Company were appointed auditors for the incoming year.

INCOMING PRESIDENT'S ADDRESS.

Dr. H. R. R. Grieve delivered his address (see page 545). At the conclusion of the address Dr. B. T. Edye moved a vote of thanks to Dr. Grieve for his address. Dr. A. J. Murray seconded the vote of thanks which was carried by acclamation.

INDUCTION OF PRESIDENT.

Dr. A. C. Thomas inducted the President for the year 1947-1948 (Dr. H. R. R. Grieve). Dr. Grieve thanked the members for his election.

Medical Societies.

MELBOURNE PEDIATRIC SOCIETY.

A MEETING of the Melbourne Paediatric Society was held on September 11, 1946, at the Alfred Hospital, Melbourne, Dr. A. P. DERHAM, the President, in the chair.

Treatment of Pneumonia in Children.

DR. R. L. FORSYTH reviewed the records of pneumonia patients admitted to the Children's Hospital, Melbourne, during the past few years. Dr. Forsyth said that many years ago the Children's Hospital was asked to test the efficiency of an antipneumonic serum made by the Commonwealth Serum Laboratories. For this it was necessary to make an analysis of mortality rates. Six hundred successive case charts were examined, with what was to him a surprising result. The death rate was 6%, 4% of deaths being due to empyema. In the remaining 2% the patients were exhausted babies with bronchopneumonia, or the deaths were due to meningeal or peritoneal spread. Obviously empyema was the most dangerous enemy. Since the sulphonamide drugs and penicillin had been used, it was interesting to note the change in results. In 200 successive cases there were nine in which some seropus or frank pus was obtained by the exploring needle; none of these patients died. No patient in the series developed meningitis or peritonitis. Among 164 children aged over one year, there were two deaths; both were unusual cases, and the patients were apparently resistant to this new treatment. Dr. Forsyth went on to say that as this figure seemed too good to be true, he had looked up a further series. There were three deaths from empyema in 480 cases. The empyema mortality rate had therefore been reduced from 4% to 0.5%.

Dr. Forsyth then said that among babies aged under one year, the results were not so triumphant; in fact, they were very bad. Of 52 babies admitted to hospital, 16 died in the first twenty-four hours. These cases were rejected for statistical purposes, as no treatment could hope to revive patients so moribund. Of the remaining 36 babies, eight died. Every case sheet had been examined, the post-mortem results being included. These eight babies died with bronchopneumonic signs, the most important of their clinical and post-mortem findings.

Thus it had been found that for children aged over one year the mortality rate was 1.25%; for those aged under one year it was 22.25%. The total mortality rate was 5%.

In children aged over one year, the rise in temperature yielded very quickly. When they were treated with one grain of a sulphonamide per pound of body weight, the fever ceased in fifty hours. Drug treatment was continued for six and a half days. Of the patients 8.5% seemed to derive no benefit from the drug, but only two died. These figures were, of course, averages. It seemed obvious that the patients responded quickly to treatment or did not respond at all.

Dr. Forsyth wondered why the mortality rate was so high among babies. He had the impression that there might have been fewer babies in the first series, but that did not alter the facts. Of the 36, ten were obviously resistant to the sulphonamide drug; eight died in spite of the administration of both sulphamerazine and penicillin. Bronchopneumonia in babies was apt to be due to a mixed infection; this was a well-known fact, and so should be acted on. Far too often administration of the sulphonamide drug had been continued for days after it had seemed useless. If one was in doubt, one should by all means give it; but one should remember the finding in this series—fever yielded quickly, or not at all. Dr. Forsyth said that he did not see any benefit in a change from one sulphonamide drug to another, perhaps because they were seldom changed. He believed that sulphamerazine was satisfactory. Many factors confused the issue. More babies were admitted to hospital now, and many died in hospital who would formerly have died at home. One might blame the war, the weather, or the increase in upper respiratory infections among adults. The soldiers gathered together "stepped up" the virulence of the organisms among themselves, and then distributed them to their families. Having made one's excuses, one might add that babies could easily be overtreated. When an exhausted child with a weakened digestion had sulphamerazine by mouth, penicillin by the buttock and glucose and saline solution by the vein, its vitality and its patience might be exhausted. If a drug was not definitely specific for the infection, the provision of warmth and food might still be better treatment for babies.

DR. ROBERT SOUTHBY said that he felt diffident about opening the discussion. Dr. Forsyth had been a member of the Children's Hospital staff when he (Dr. Southby) was laid low with bronchopneumonia. Dr. Forsyth had taught his students not to read books too much, but to look for things themselves. All respected Dr. Forsyth for his forthright statements. On this occasion he had given an able presentation of facts dealing with patients under his care and those of his colleagues. It would be argued that in the series of 600 cases, 6% of deaths and 4% of empyemata were high figures. However, he took the figures to include all patients with pneumonia at all ages. It was a well-established fact that pneumonia in children aged over two years was not much of a bugbear at all, and most patients recovered with good nursing care. It was the group aged under twelve months which caused the greatest concern, as Dr. Forsyth had demonstrated. The great majority of patients with pneumonia aged under twelve months had bronchopneumonia, whilst lobar pneumonia predominated in patients over this age. In the group aged under twelve months, ten patients out of 36 were resistant to sulphonamide therapy. In the older group the figure was much lower. Dr. Southby said that it might be wondered why this discrepancy existed. The explanation was not obscure. In bronchopneumonia as such the cause might be bacterial infection, virus infection, or (as often happened in young babies) aspiration of foreign matter. This might be *liquor amni* in the case of the newborn, or portion of a feeding in the case of a difficult feeder. It was also recognized that aspiration bronchopneumonia was usually a mixed type of infection in which bacteria, virus and mechanical irritation all played their parts. Another aspect to be considered in young babies was the frequency with which cases of infectious disease such as measles and pertussis were complicated by bronchopneumonia.

Dr. Southby went on to say that the resistance of some types of pneumonia to sulphonamide drugs explained the importance of trying to investigate cases bacteriologically more than was the custom. The usual term bronchopneumonia did not suggest the existing cause. Many years ago Dr. Reginald Webster had been working on the typing of pneumococci, and had obtained very significant results. Different types of pneumococci had been identified. Since then the typing of pneumococci had extended. If more facilities were available for the work, more light might be shed on how to deal with difficult cases. Other organisms also might be identified with the disease by this means—namely, staphylococci, streptococci, viruses and perhaps mixed organisms. If this was possible it might give the clinician a lead as to which infections would respond to sulphonamides, which would require the exhibition of

penicillin and sulphonamide, and which would probably not respond to either.

Dr. Southby then said that Dr. Forsyth had mentioned that warmth and proper feeding might be the best treatment in the first twenty-four hours of the disease. All would agree with him in this respect. The dehydrated young baby suffering from shock needed warmth and good food, and then would be in a condition to cope with the infection. The need for proper pre-operative treatment had been amply demonstrated in pyloric stenosis, and some parallelism existed with pneumonia. Another point for consideration with regard to the group aged under twelve months was the question whether they were admitted to hospital primarily with bronchopneumonia, or whether they contracted the disease as a cross-infection in hospital, having been admitted with gastro-enteritis, tonsillitis *et cetera*. A large number of people came in contact with these babies in hospital, and there was a real risk of cross-infection. If these infections were included in the statistics of bronchopneumonia, they would cause an exaggeration in the mortality rate from that disease as such.

With regard to empyema, Dr. Southby said that Dr. Forsyth had described some cases in which thick laudable pus was present. This again brought them to the type of infection. Pneumonia had been described according to the type of response—for example, croupous in pneumococcal infections. A catarrhal response was more likely in a streptococcal infection, a suppurative reaction was met with in mixed or staphylococcal or Friedländer's bacillus infections, and the aspiration type of pneumonia represented a mixed infection with an added mechanical element. In pneumococcal empyema it was wise to open and drain the cavity as soon as possible, either by rib resection or by intercostal drainage, as long as drainage was adequate. As a resident medical officer, Dr. Southby had found that if the pus was thin and blood-stained the infection was usually streptococcal, and could be cured by repeated aspiration and drainage, but even then might require surgical treatment subsequently. It had been demonstrated that a proportion of patients with streptococcal empyemata had recovered completely with chemotherapy alone.

Dr. H. BOYD GRAHAM said that he was very interested in the subject under discussion. Dr. Forsyth's talk had been friendly and breezy and close to the point; it could easily be seen that it meant several weeks of careful survey. His suggestions and points for discussion had to be given very serious consideration. Paediatricians were on the defensive in the case of these babies. Many would agree that the nurse had as much to do with the survival of afflicted babies aged under twelve months as the chemist or the doctor. Those present could not feel at all satisfied with what had been going on at the hospitals. Inadequate "barrier" nursing and widely open wards militated against success. Dr. Graham said that he had been experimenting in trying to get these babies through bronchopneumonia without loss of weight. This meant concentrating on their feedings. It was customary to give these babies special feedings with insufficient calories and excessive carbohydrate. They should observe the main principles of dietetics with adequate calories and a well-balanced, readily assimilable mixture. Another point to be grasped with regard to treatment in the initial stages was the necessity for extra immune bodies. These might be supplied in immune serum or blood. Dr. Graham said that he was anxious to hear more about serum treatment.

Dr. HOWARD WILLIAMS said that he wished to make two or three points. They needed to define the problem more precisely before they could find out why some patients did not do well. Obviously their approach should be bacteriological. Someone should undertake a bacteriological survey, and a valuable lead might be obtained. It was essential to do this from the outset. It was apparent from what had been said that good general nursing care was essential, and this was not so well carried out as in the past because of wartime shortages of staff. Dr. Williams further said that respiratory embarrassment was very great in these cases, and the babies became anoxæmic. The oxygen therapy given was often merely a *placebo*. Oxygen was administered at too slow a rate, so that the nurse's time was wasted and the baby did not derive a scrap of benefit. Oxygen had to be given at the rate of three litres per minute and by a double intranasal catheter. In the case of very ill babies the only satisfactory method was the oxygen tent, an oxygen atmosphere of not less than 40% being maintained. No satisfactory apparatus for this purpose existed in Australia.

Dr. F. V. SCHOLES said that he did not wish to throw bricks. He was grateful to Dr. Forsyth for his provocative talk. It gave cause for much thought. Dr. Southby and Dr. Boyd

Graham had filled in the gaps left by Dr. Forsyth. Dr. Scholes was in complete agreement with the points made by all speakers. He said that at first he was confused as to whether Dr. Forsyth's 600 cases were of lobar pneumonia or of bronchopneumonia. When Dr. Forsyth amplified this and further divided the cases according to age, the problem became clearer. Lobar pneumonia in older children was no longer a problem. One could not say that they were recovering because of advances in chemotherapy, since in the old days the recovery rate was very high. Dr. Scholes said that he disagreed with Dr. Forsyth on the actual cause of death in the group aged under twelve months. Dr. Forsyth at first had said that the autopsy appearances suggested that the babies died of bronchopneumonia. Later he contradicted himself when he said that a baby aged under twelve months who succumbed to bronchopneumonia was "a funny sort of child". Most of these children died with bronchopneumonia. Dr. Scholes said that he was not prepared to concede that bronchopneumonia was the sole factor, nor even the deciding factor. The difficult feeder, the premature baby, the constitutionally weak baby, were all often weeded out during the first twelve months, and bronchopneumonia was the mode of death rather than the cause. In cases of frank bronchopneumonia, whether accompanying pertussis or after measles or accompanied by upper respiratory tract infection, one could expect a response to chemotherapy irrespective of the age of the sufferer. In other cases, the progress was not so good after the initial doses of sulphonamide. Dr. Forsyth's patients were tested by clinical tests. If they were not getting better, it was assumed that they were affected by organisms resistant to the drugs used. It had to be remembered, however, that other factors might have prevented recovery.

Dr. Scholes went on to say that some of the results revealed by Dr. Forsyth's paper had been strongly criticized. He was referring to the series in which eight deaths had occurred in 36 cases. No information had been given about the period during which this figure had obtained. Dr. Scholes remembered an epidemic five years earlier, in which over 90 people out of 290 had died. The mortality figure was higher still for babies, most of whom were given chemotherapy. In another epidemic associated with pertussis the mortality rate was only a quarter of this figure. In other words, considerable variation was met with from time to time. Nursing, air space per bed and other factors played significant roles. The type of infection varied from year to year. The fact that eight died out of 36 was not a disgrace; but it was sufficient to make medical men sit up and see what could be done, and bacteriological investigations seemed the answer. It had also to be remembered that they were not simply treating pneumonia and injecting a chemical into a test tube, but that they were treating a sick baby. These babies aged under twelve months were often not fitted to stand up to anything. In conclusion, Dr. Scholes said that he thought oxygen therapy was a life-saving measure in these cases, and he had come to the meeting to get some information about it.

Dr. H. McLORINAN expressed gratitude to Dr. Forsyth, if only because he had given a jolt to their complacency. It would readily be agreed that they could not feel satisfied with the state of affairs in regard to babies aged under twelve months. In the *British Medical Journal* some time in 1943, the Glasgow school had compared pneumonia occurring between 1928 and 1938 and pneumonia occurring between 1939 and 1942. A considerable reduction in mortality rate was observed in all age groups. Among babies aged under one year the reduction was 14%. In other groups there was a very great reduction indeed, except in the group aged over forty-five years, the mortality rate in which corresponded to that of the babies. These figures might give a clue as to why the response to sulphonamides might be unsatisfactory in some cases. In these there was what might vaguely be called a lack of tissue response and repair power; it did not appear that the answer was in increased bactericidal treatment. In the article quoted, serum therapy and chemotherapy did not reduce the mortality rate in either group. The majority of the cases were of bronchopneumonia. This occurred in patients who were unable to throw off a primary infection, thus indicating that they lacked the capacity to repair tissue. The emphasis laid on chemotherapy depended on two factors—the susceptibility of the organism and the necessity of obtaining a high percentage of sulphonamide in the blood and maintaining it over long periods. But there was a further factor also; this was the patient's own power of manufacturing antibodies and the capacity for repair. This brought up the point of feeding. They were probably inclined to overdo intravenous drug therapy and to rely too much on it. Not enough body building substance or protein was given. There was a grave danger of waterlogging these babies. In the pertussis ward at the Queen's

Memorial Infectious Diseases Hospital, Fairfield, gavage and nasal feedings with a normal diet were used as much as possible. Food given by slow drip by the nasal route was often retained, even by babies previously vomiting.

DR. MOSTYN POWELL said that he had very little to add. Dr. Forsyth had been deliberately provocative. The crux of the matter was that so many of the babies aged under twelve months who succumbed had some other condition leading up to the bronchopneumonia. Of the last three patients in the wards, one was a very sick baby aged four months; he was cold and clammy and suffering from shock, and he recovered after large doses of penicillin and sulphanilamide. The second child was aged fourteen months; he was cyanotic, and had an associated congenital heart anomaly; he recovered in twenty-four hours. The third child was aged six months, and was very ill and pale: the haemoglobin value was about 30%; he died forty-eight hours after the onset, and the cause of death was gross anaemia rather than bronchopneumonia. The cause of the anaemia was not ascertained. Dr. Powell said that it had to be remembered therefore that there were other factors besides the pneumonia to account for the high mortality rate in patients aged under twelve months. Sulphonamides were used extensively in the home, and it was interesting to speculate on how often pulmonary disease might have been aborted in this way.

DR. STANLEY WILLIAMS said that Dr. Forsyth had fired a broadside which had been given almost an atomic distribution by the other member of the Williams family, whilst the mentor of the family had accentuated the viewpoint of individual variations. There was complete agreement on these points. Dr. Williams said that he had enjoyed all the side angles in the discussion, especially Dr. Boyd Graham's angle on feeding. Dr. Williams would not agree that a cow's milk mixture which the baby vomited was preferable to a condensed milk mixture which was retained. It was good practice to give a feeding mixture that would be kept down irrespective of calories. Too much emphasis was laid on sulphonamides. A change to penicillin was indicated. The bacteriological approach to the problem was imperative. They had very few reports from overseas on this aspect. The type of drug that would be effective depended on bacteriological investigation. They had much to learn on the dosage and the frequency of injections necessary in the case of penicillin. In practice most patients were treated with sulphonamides. Soon penicillin would be used more extensively. It was interesting to speculate on whether streptomycin would effect a cure in the group of patients resistant to other drugs.

DR. KATE CAMPBELL said that the important thing was to treat the baby as a whole. This aspect was often overlooked. When extensive treatment was carried out the baby got very little rest, and it was necessary to conserve energy in these cases. The clinical impression was that chemotherapy, especially with penicillin, had made a great difference to the newborn. In the case of babies a few days old the main difficulty was to get in sufficient fluid—two and a half ounces per pound of body weight. The continuous gavage tube solved the problem. If this could not be used, the problem was very difficult. With penicillin this was not so important. The oxygen catheter in the nose completely occluded half the nasal airway; it seemed that the oxygen tent supplied by "Austox" was more helpful. The digestive powers of babies were inhibited by the illness. This could be seen on examination of their stools. It was necessary to cut the feeding according to their digestive capacity. The use of serum or globulin was also interesting. It had been given to newborn babies with some success.

DR. G. PENINGTON thanked Dr. Forsyth for his stimulating address. He asked why sick babies were given sulphonamides in the initial stages. All the sulphonamides were toxic, though sulphamerazine had few side effects; but penicillin was preferable to them all. How were they to determine the dosage necessary for babies? Dr. Penington said that he felt that they could not administer too much; it was better to err on the side of overdosage. If there was no apparent response to penicillin alone, it was wise to give sulphonamide too, because of the different antibacterial effect. The importance of determining the bacteriological picture could not be over-stressed, and the staining of direct smears of the sputum would be useful pending confirmation by cultural methods. Gavage was obviously the best way to administer extra fluid to these babies. It had to be remembered that these children might die of anoxæmia and not toxæmia, and until one could satisfactorily administer oxygen in high percentage it would not be possible to lower the mortality rate.

DR. ALAN PENINGTON said that in cases complicated by empyema it was possible to produce a sterile effusion by using penicillin intrapleurally and parenterally. However,

at the end of four to six weeks there was radiological evidence of pleural thickening. The patients were afebrile and looked well, though they were not quite up to the mark. If resection was performed at this stage, a pocket of sterile pus might be found, the evacuation of which completed the recovery of the patient. When pus was present in the pleural cavity it should be drained. Dr. Penington said that he had also been struck by another interesting point after examining pleural fluid and sputum in cases of empyema and bronchiectasis associated with a foul odour. This was the presence of a Gram-positive organism rather like a branching mycelium. Dr. Hilda Gardner at the Royal Melbourne Hospital had observed a similar organism in cases of bronchopneumonia not responding to penicillin. The organism could not be classified. It might have something to do with penicillin-resistant pneumonia. It might also be concerned in aspiration pneumonia in infants resistant to chemotherapy.

DR. L. WATT said that it was not uncommon for children to be discharged from hospital as cured, but later brought to the out-patient department because they were far from well. On examination of these children physical signs were detected, and he had seen bronchiectasis rapidly develop. Proper convalescence and avoidance of exposure to fresh infection were important.

DR. GLYN WHITE said that he had listened with great interest to Dr. Forsyth's remarks. He recalled from his student days Dr. Forsyth's powers of stimulating thought on any subject. One important point had apparently been overlooked by previous speakers; were they not shutting the stable door after the horse had bolted? Prevention had always to occupy a high position in these cases. During the last twelve months, he had seen only two patients with bronchopneumonia in the suburb in which he had been working. During a period as *locum tenens* for four weeks in another suburb he had met with fifteen cases. He wondered whether the incidence was greater among artificially fed babies. Many parents were careless in their management of babies. Dr. White asked Dr. Williams whether he had used Tudor Edwards's spectacles in the administration of oxygen. These had been used with success at the Brompton Hospital, London, and were apparently better than the double intranasal catheter. In the oxygen tent, the humidity became so high that it was suffocating.

DR. NORMAN WETTENHALL said that as a resident medical officer he had been impressed by the frequency of spasmodic cough in babies suffering from bronchopneumonia. It simulated the cough of pertussis and was distressing to the patient. These babies did not respond to sulphonamide or penicillin and needed a prolonged stay in hospital. Dr. Wettenthal wondered whether anyone had any suggestion to alleviate this type of cough. The steam tent did help in one or two cases in which it was used.

DR. MONA BLANCH made a plea for adequate feeding of infants suffering from bronchopneumonia. She said that adults with pneumonia lost their appetite and presented a difficult problem in dietetics. She asked how a small baby could take a normal diet, even if it was made digestible. It was reasonable to reduce the strength of the mixture and increase the carbohydrate content, because this made it more digestible. Protein was important, and the use of "Bengerization" might help in this respect. Dr. Blanch recalled a baby who had failed to respond to penicillin and sulphanilamide, Friedländer's bacillus being considered to be the causal organism. The mother of the baby insisted that the yellow penicillin came through in the stools. Dr. Blanch wondered whether this was possible.

DR. P. CODY said that whilst working under Dr. Scholes he had been impressed by the number of babies who became water-logged and actually died from drowning. Dr. Cody asked whether better results might be obtained in such cases by keeping the head low. At the hospital at Fairfield he remembered one baby with congenital *morbus cordis*, pertussis and bronchopneumonia. The child collapsed three or four times during the first twenty-four hours. The only thing that brought him back to life was to hold him up by the legs, when half a pint of fluid used to drain out. Dr. Cody had not seen this measure previously exploited. It had been said that there was only one possible position to revive a toxæmic patient—the position for maximum comfort and rest, recumbency. Dr. Cody wondered whether this pertained to babies.

DR. H. BOYD GRAHAM elaborated his previous remarks, which he thought had apparently been misinterpreted. It was necessary to order an appropriate diet with due regard to caloric needs and distribution of the basic elements. Marriott had published a book on the gastric acidity in these cases. Dr. Blanch's patients who refused food almost undoubtedly had hypochlorhydria. Babies afflicted also had

associated hypochlorhydria, and might therefore well be given lactone syrup milk. "Bengerized" cow's milk might be suitable in some cases. Homogenized feedings such as dried milk mixtures could also be employed with success. Therefore, with regard to the question of assimilability, they must adhere to the principles of correct dietetics, at the same time varying the ingredients to make them more digestible and in particular to avoid under-feeding.

DR. DUDLEY HAGGER asked whether Dr. Forsyth had divided his babies into those receiving penicillin and those not receiving penicillin. Penicillin might not be the complete answer to the problem; but it might well be one of the factors that would make the difference between success and failure. Dr. Hagger agreed with Dr. Williams on the necessity for adequate oxygen therapy. He asked whether the two series of 600 cases were comparable. In the olden days 2% of pneumonia patients had died of causes other than empyema. In the more recent group 4% died from these causes. If the groups were comparable, this striking fact should be provocative of more discussion and should call for more action.

DR. WARWICK SMITHERS said that pulmonary collapse added to the hazards of these babies and so far had not been mentioned. It also contributed to the anoxæmia as well as to the paroxysmal cough alluded to by Dr. Wettenhall. Experiments had been carried out at the Brompton Hospital with millet seeds placed in the lungs of rabbits, and a cough rather like pertussis had been produced. The intermittent administration of "Carbogen" and oxygen might ventilate such collapsed areas and relieve the cough. Dr. Smithers said that investigations of the blood protein content might assist in prognosis in these cases, and help was sometimes available from X-ray examination. He asked whether penicillin was such a great advance over the sulphonamides in treatment. Pneumonia patients who would not respond to sulphonamides would not respond to penicillin. He admitted that he had not the courage to withhold penicillin in severe cases.

DR. A. P. Derham, from the chair, said that he wished to make one or two points which were elementary but had a bearing on the cases of bronchopneumonia. Atropine had not been mentioned in the discussion on treatment, and yet he was convinced that in some cases atropine alone was a life-saving drug. During the last few weeks, a boy, aged two and a half years, had been admitted to hospital from the out-patient department, cyanotic and almost *in extremis*. In the ordinary course of events the child would have succumbed in a few minutes. The nursing staff had elected to place him in a semi-Fowler position. The problem was soon seen to be one of "drowning", and so he was tipped up into a modified Schäfer's position and given atropine, and with the help of a spatula three or four eggcupfuls of mucopus drained from his mouth. Penicillin and sulphonamide were used to control his toxæmia, and in twenty-four hours he was much improved. He had been saved by the elementary common sense of first-aid treatment. Dr. Derham said that he had encountered a number of cases before the days of the sulphonamides in which atropine seemed to be a life-saving factor.

DR. Derham went on to say that he had observed that moderate doses of opiates had been ordered in one or two cases of bronchopneumonia. For adults with lobar pneumonia and pleural pain a dose of morphine might be life-saving. In bronchopneumonia, when the elimination of secretions was important, opiates in any form might be dangerous and might be a factor in causing death, eliminating the cough reflex. It was a fact also that many young children suffering from pneumonia died of circulatory failure rather than of cardiac failure itself. This resembled surgical shock. He had seen a number of children, apparently in danger of death from this source, who responded to pituitrin.

DR. Forsyth, in reply, said that he found himself at a loss; he missed his old antagonists. The discussions had been on much too polite a level, and he could not jump on perfect gentlemen. The effects of new drugs in treatment were not very encouraging. He had waded through 300 charts before selecting 200 cases. No patients with measles or pertussis had been included. Dr. Forsyth said that he had had the misfortune early in life to be a bacteriologist for three years. He had had some experience then in trying to isolate the infection in cases of bronchopneumonia. In these cases the infections were more mixed than in gastro-enteritis. The myriad of germs obtained would frighten the stoutest heart. Dr. Forsyth said he would like to give oxygen; he placed an afflicted child in a tent, but what did nurse say? She wanted to feed the patient and otherwise attend to his wants. The matter was very difficult, and it was easy to have beautiful ideals.

DR. Penington had asked why penicillin should not be given in all cases. Dr. Forsyth said that he would like Dr. Penington to go round and see that this drug was given. It was almost impossible to get a nurse to give even an enema at present, and hospital treatment was difficult to obtain.

DR. Forsyth went on to say that all his cases were cases of primary bronchopneumonia. Many speakers had handed their cases to the bacteriologist and the nurse. Warmth and proper feeding were all-important. An adequate diet should at first be tried. If the stools were abnormal, the food should be modified. Fat was not always to blame. Lactone syrup mixture or "Benger's Food" might well be tried. Bronchopneumonia was often the result of carelessness and ignorance, just as gastro-enteritis was. To the astonishment of the student, Dr. Forsyth had often insisted that he did not think the mother's ignorance of the decimal system was at fault. Dr. Forsyth said that he hated masks, but thought they were a lead in the right direction. Sneezing in babies was a menace. All the speakers had avoided his question whether sulphonamide treatment should be continued after three days if no apparent benefit was obvious. He thought it might do harm in such cases. Nor had anyone mentioned distension of the abdomen. If sulphonamide acted, it acted quickly. If it did not act, why continue to administer it? Dr. Derham had concluded on an important point, and that was the inadvisability of ordering a depressant to a drowning patient. This held, no matter what sedative was used. Dr. Forsyth said that sedatives for babies with bronchopneumonia did not appeal to him. He had ordered aspirin. What could one do with the troublesome cough? Aspirin, sodium citrate or phenazone could be used with benefit. Dr. Forsyth said that he had great sympathy with Dr. Cody's method of holding the baby up by the heels. He had often patted these patients on the back. Whether it did any good, he could not say. Dr. Forsyth said that he did not see bronchopneumonia in private practice; he lived in a healthy suburb. Deaths occurred at the hospital. Dr. Forsyth reiterated that he would be glad to know whether it was wise to persist with the use of sulphonamides in non-responsive cases. He asked whether small doses of sulphonamides did any good. Such a method of administration appealed to him to be equivalent to putting a drop of phenyl down the drain every fortnight. With regard to empyema, Dr. Forsyth said that if thick pus was obtained it must be let out. In France he had had great trouble at the casualty clearing station. Patients were operated on at the bases and were said to be cured absolutely. He really deserved a medal, because he was the only doctor who had seen patients with chest wounds and had not written a paper on the subject. He appeared to spend most of his time operating on patients who had been "cured" by the authors of such articles. He had great trouble in having the patients operated on at the present time. Penicillin was injected, and if the patient survived, this was regarded as wonderful. Every move was taken to prevent an operation. Dr. Forsyth had yet to be convinced that this attitude was correct.

Obituary.

DONALD IAN ROBERTSON SMITH.

We are indebted to Dr. McKellar Hall for the following appreciation of the late Dr. Donald Ian Robertson Smith.

Donald Smith was more than an eminent doctor. He was a vital personality known throughout the considerable length and breadth of Western Australia. To a large number of the citizens of this State he was known personally; to a greater number by repute. His personality was vivid, magnetic and full of humour.

Donald Smith was the eldest son of Mr. and Mrs. Donald Smith, of Sydney, where his father was a leading dentist. It had been decided that Donald, too, should enter the dental profession after first obtaining a medical degree. He qualified in 1914, and after eighteen months on the resident medical staff of the Sydney Hospital he went to France with the first Australian Imperial Force. He served with the Australian Army Medical Corps and Fourth Machine Gun Battalion, and in the latter part of the war gained considerable experience in radiology which was then in its very early years. In 1918 he married Frances Margery Chennell, an Australian army nurse.

Perth first saw Donald Smith in 1920 when he commenced practice as the city's first qualified radiologist. His resources both economic and of apparatus were slim, but his energy, ideas and enthusiasm were endless. He was soon well known

in his new surroundings. His colleagues from the outset recognized the high standard of his work, his meticulous insistence on detail, his sound judgement and his sincerity. Like other brilliant dynamic minds, he was self-confident. His self-certainty, mercurial thinking and eloquence would often overwhelm any who thought to inquire whether there were not another side to any viewpoint. But this dogmatism, which was apparent in all his varied activities, was absent from his professional work when he set down his opinions. Perhaps it was because of this self-assurance in all things else that he could exhibit such mature humility in his scientific work. He was a first-rate anatomist and a most painstaking and systematic observer. His mistakes were few—and he was the first to admit them. There was no face-saving, no covering up of blanks in his knowledge and no bolstering of personality at the expense of scientific honesty. He would argue solely on experience and facts as he saw them in the X-ray film. If a sound alternative interpretation was put forward he immediately admitted it. If he was proved wrong it was always he who gave first and



most publicity to this proof of human fallibility. Although his speciality was one of detailed diagnosis, he was always primarily interested in the patient as a human being. From Donald Smith the patients received more than an X-ray diagnosis. More often than not they left with a wealth of sound medical advice, a prescription how best to order their lives and not a few comments on the proper regulation of the universe. To those who were very sick and especially those afflicted with malignant disease, he had a capacity for sharing his superb optimism. He made people "feel" better and rarely can the hopeless have received so much comfort from a doctor as these people received from Donald Smith. It was his proud boast that never in twenty-five years had the word "cancer" been used within the hearing of any of his patients; and few things would make him more angry than the doctor who gave his patient a bald and hopeless prognosis. On this point he would not compromise. That there might be special circumstances he would not admit: they could be got around in other ways. Above all other considerations stood his belief that it is never the duty of a doctor to rob his patient of hope.

Outside his profession Donald Smith became, if that was possible, even better known. His gifted and inquisitive mind found absorbing interests wherever he went and by nature he was always popular and entertaining. He was an enthusiastic surfer and tennis player and a very able pianist

and organist; but most of his fame in the community rested on his stage work. He was at home in most roles, but excelled as a producer, dancer and comedian. In 1924 he received a very attractive inducement to forsake medicine for the professional stage. All these activities which seemed indispensable as outlets for his boundless energy ended calamitously with the loss of a leg at the age of thirty-seven. From then on he was forced into the unaccustomed role of onlooker. The readjustment must have been irksome and painful, but his optimism remained. It was characteristic of him that in 1940, with his partner preoccupied with army service, he undertook the task of producing two large-scale and expensive musical comedies for the amateur stage. The lavish expenditure of energy on this type of activity over many years must have contributed much to his early death at the age of fifty-four.

For eleven years Donald Smith was a member of the Western Australian Branch Council of the British Medical Association. He was President in 1932 and Honorary Treasurer from 1934 to 1943 inclusive. As with everything he did, there was nothing perfunctory about the service he gave the Association over these years.

Council he always expressed himself with balance and reason and his ready wit always brought a freshness to the discussions, which will be long remembered and sadly missed by his colleagues. In the past when Council meetings took place in rotation in the homes of members, Donald proved an outstanding host, and many were the evenings when, after long and sometimes tedious discussions, he went to his piano and charmed all with his brilliant renditions from the Gilbert and Sullivan repertoire. Association dinners and other social functions were always keenly looked forward to when he was the organizing genius. He not only contributed himself, but also attracted artists of the highest calibre, to the utmost enjoyment of all present.

Ideas and standards set by him have played a great part in building the foundations of the administrative structures of the Association today.

Donald Smith left a widow, two sons and a daughter. With them the profession in Western Australia can claim to share a very personal and still rather unreal loss.

Dr. Michael Kelly writes: The brilliant personality of Donald Smith is deserving of a tribute from one who knew him only after he had been stricken, early in life, with a vascular disease which deprived him of one leg and repeatedly threatened him with the loss of the other. For twenty years he was tortured by pain and tormented by the restriction of his mobility, but his mind only gathered fresh vigour. In each new trial he saw only another opportunity for a victory of the spirit over material things. His philosophy was deliberately cultivated and he argued it with conviction and generous enthusiasm. At such moments he conveyed an impression of extraordinary vitality, his features danced with life and his voice rose in praise of the object of his idealism. He was raised in the shadow of Anderson Stuart, and his eloquent veneration of that great man has been near to calling him back to earth. Many others, like me, are richer for having known Donald Smith.

ALBERT EDWARD MARTIN.

WE regret to announce the death of Dr. Albert Edward Martin, which occurred on April 12, 1947, at Perth, Western Australia.

JOHN RHYNS WILLIAMS.

WE regret to announce the death of Dr. John Rhys Williams, which occurred on April 19, 1947, at Melbourne.

Australian Medical Board Proceedings.

QUEENSLAND.

THE undermentioned have been registered, pursuant to the provisions of *The Medical Acts*, 1939 to 1946, of Queensland, as duly qualified medical practitioners:

Fraser, William Hector Munro, M.B., B.S., 1941 (Univ. Sydney), Kara-Kara, Belgrave Road, Indooroopilly, Brisbane.

Fairbairn, Jean Margaret, M.B., B.S., 1943 (Univ. Sydney), District Hospital, Bowen.

Pittar, Desmond John, M.B., B.S., 1942 (Univ. Sydney), Commonwealth Health Laboratory, Rockhampton.
 Sheehy, John Edward, M.B., 1944 (Univ. Sydney), General Hospital, Bundaberg.
 McCaffery, Louis Henry, M.B., B.S., 1945 (Univ. Sydney), c.o. Dr. W. E. Lindsay, Gympie.
 Wyse, Sydney James, M.B., B.S., 1946 (Univ. Sydney), c.o. Dr. Hume, Toowoomba.
 Hayhow, William Russell, M.B., B.S., 1946 (Univ. Sydney), St. Helena Street, Isisford.
 McMahon, Leo Hanney, M.B., 1938 (Univ. Sydney), Bage Street, Nundah, Brisbane.
 Burritt, Barbara Joyce, M.B., B.S., 1940 (Univ. Sydney), 110, Elizabeth Bay Road, Elizabeth Bay, New South Wales.

The following additional qualification has been registered:
 Johnson, Horace William, Ballow Chambers, Wickham Terrace, Brisbane, M.R.A.C.P., 1946.

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Keller, Douglas Holcombe, M.B., B.S., 1946 (Univ. Sydney), Royal North Shore Hospital, St. Leonards.
 Ziegler, Erich, registered under Section 17 (b) of the Medical Practitioners Act, East Gresford.

Notice.

SERVICES MEDICAL OFFICERS' ASSOCIATION OF NEW SOUTH WALES.

THE annual general meeting of the Services Medical Officers' Association of New South Wales will be held at 8.30 p.m. on Thursday, May 8, 1947, at the Robert H. Todd Assembly Hall, British Medical Association House, 135, Macquarie Street, Sydney. The honorary secretary of the association is Dr. J. M. Yeates.

AUSTRALIAN AND NEW ZEALAND ASSOCIATION OF RADIOLOGISTS.

THE annual general meeting of the Australian and New Zealand Association of Radiologists will be held at 10 a.m. on Friday, May 16, 1947, at British Medical Association House, 135, Macquarie Street, Sydney, and not at Canberra, as was previously announced. The annual general meeting will be followed by the presentation of various papers and demonstrations, which will occupy the whole of Friday and Saturday, May 16 and 17. Members who intend to remain in Sydney for the following few days are invited to attend hospital clinics and diagnostic laboratories; a schedule will be posted in British Medical Association House during the meeting. Members of the medical profession are invited to attend the meeting.

Medical Appointments.

Dr. W. E. Summons and Dr. F. V. G. Scholes have been appointed members of the Commission of Public Health, pursuant to the provisions of Section 8 of the *Health Act*, 1928, of Victoria.

Dr. O. W. Leitch has been appointed a member of the Medical Board, Port Pirie, under the provisions of the *Workmen's Compensation Act* of South Australia.

Books Received.

"The Dental Assistant's Handbook", by Gertrude I. West; 1946. London: William Heinemann (Medical Books), Limited. 9 $\frac{1}{2}$ " x 6", pp. 118, with illustrations. Price: 6s.
 "Medical Disorders of the Locomotor System, including the Rheumatic Diseases", by Ernest Fletcher, M.A., M.D. (Cantab.).

M.R.C.P.; 1947. Edinburgh: E. and S. Livingstone, Limited. 9 $\frac{1}{2}$ " x 6", pp. 638, with many illustrations. Price: 45s.

"Diseases of the Nervous System: Described for Practitioners and Students", by F. M. R. Walsh, M.D., D.Sc., F.R.C.P. (London), F.R.S., D.Sc. (Hon.), National University, Ireland; Fifth Edition; 1947. Edinburgh: E. and S. Livingstone, Limited. 9 $\frac{1}{2}$ " x 6", pp. 370, with many illustrations. Price: 16s.

"Flying Fox and Drifting Sand: The Adventures of a Biologist in Australia", by Francis Ratcliffe, with an Introduction by Julian Huxley; 1947. Sydney, London: Angus and Robertson, Limited. 8 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ ", pp. 352, with many illustrations. Price: 12s. 6d.

Diary for the Month.

MAY 6.—New South Wales Branch, B.M.A.: Organization and Science Committee.
 MAY 7.—Victorian Branch, B.M.A.: Branch Meeting.
 MAY 7.—Western Australian Branch, B.M.A.: Council Meeting.
 MAY 9.—Queensland Branch, B.M.A.: Council Meeting.
 MAY 13.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
 MAY 13.—Tasmanian Branch, B.M.A.: Ordinary Meeting.
 MAY 19.—Victorian Branch, B.M.A.: Finance Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phoenix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute; Brisbane City Council (Medical Officer of Health). Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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